ENGINEERING NEWS-RECORD

Powerhouse for largest chlorine plant east of the Mississippi River — See p. 4.

[PUMP TIPS FROM ALLIS-CHALMERS—ONE IN A SERIES]

How to make SHAFTS Last Longer . . .

The Allis-Chalmers "Electrifugal" Pump is a unit-designed pump . . . with both impeller and motor mounted on one shaft and in one frame. The next time you need new pumps . . . look into the extra efficiency, ruggedness and long life of Allis-Chalmers centrifugal pumps . . . the "Electrifugal" . . . and all types for every purpose.

WHERE YOU HAVE an Allis-Chalmers "Electrifugal" Pump . . . shaft and rotor pictured at left . . . you don't have an alignment problem—because *both* impeller and rotor are mounted on *one* shaft.

However, many pumps in use today are coupled to a separate motor, and how well the two are aligned has a lot to do with how long the shaft lasts . . . and the pump and coupling too . . . because misalignment starts all three fighting each other!

Here are a few tips which will help you get longer life out of pump shafts:

▶ See that pump and motor coupling flanges are parallel . . . both vertically and axially . . . and that they are kept that way!

▶ If misalignment recurs frequently, check foundations, piping, bolted connections.

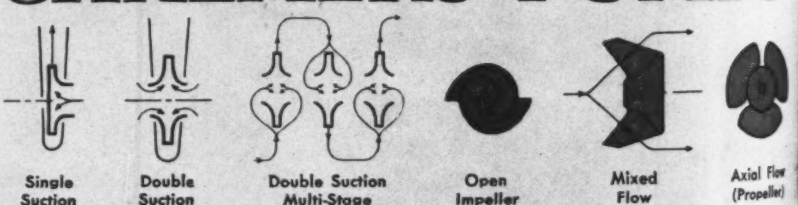
▶ In the case of boiler feed or other pumps which reach high operating temperatures, be sure that alignment of motor and pump is checked after *both* have been operating. Otherwise they might develop misalignment from unequal expansion.

▶ If you haven't done so already, send for your *free* copy of "Handbook for Wartime Care of Centrifugal Pumps". Contains no advertising. ALLIS-CHALMERS MFG. CO., MILWAUKEE 1, WISCONSIN.

Tune in the Boston Symphony, Blue Network, every Saturday at 8:30 pm, EWT.

ALLIS-CHALMERS PUMPS

Allis-Chalmers builds all types and variations of pumps shown at right. Capacities from 10 to 150,000 gpm—heads to 2500 lbs.



The Week In Engineering and Construction

ENGINEERING NEWS-RECORD • MARCH 16, 1944 • VOLUME 132 • NUMBER 11

National housing conference answers all the questions

But a wide variety of choices are given concerning materials, fabrication, financing and government participation in housing for tomorrow.

After listening to 33 papers presented at the three-day session of the National Committee on Housing, Inc., at Chicago, March 8-10, you could pick whatever answer you chose to any possible question arising on housing of the future.

To wit: Houses of the future will be made up entirely of prefabricated units, assembled at the rate of one room an hour; or brick and stone and mortar will be the principal materials of the future, as in the past, assembled at the site. War-developed materials will form our houses from now on; however, tomorrow's house will be a combination of the customary construction and assembled units—take your pick.

Then there were these alternatives: (1) Housing for the low-income group will have to be subsidized by the federal government; (2) the federal government must assume a responsibility for part of low-cost housing but private industry must do its share; or (3) private industry alone can supply all the housing needed for slum clearance and for taking care of the people in the lower third of our economic scale.

Further choice was offered as follows: Mortgages must be guaranteed by the government; the government should have nothing to do with financing but the banks and private mortgage companies should take care of it. Long-term mortgages are best because the payments are within reach of all; short-term mortgages are best because they stimulate buyers to assume complete ownership just as rapidly as possible. For variety you could accept the philosophy that the blighted areas of our cities must be rebuilt for comfortable housing, or join with another speaker who declared that our cities are decadent and the housing of the future will be out in the country away from the congested urban areas. It seems that not only did each of the 33 speakers have a different idea of housing but most of the 500 delegates attending the meeting also freely expressed their own ideas in the corridors.

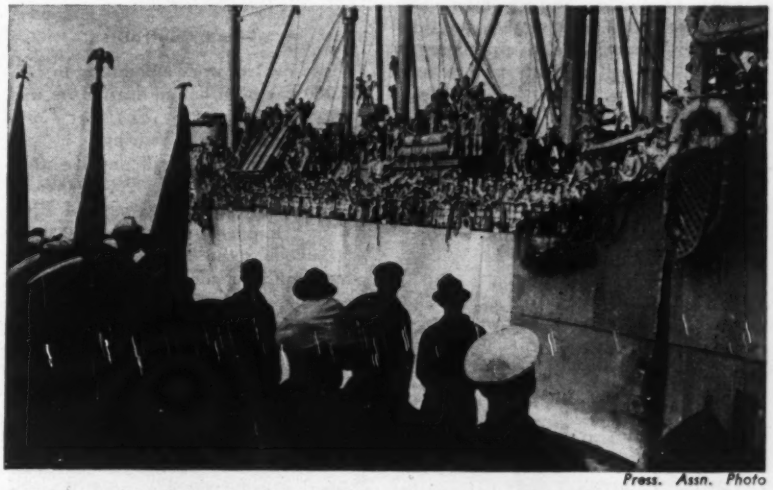
Where do we stand?

In opening the convention Mrs. Dorothy Rosenman, chairman of the National Committee on Housing, expressed the reason for the session: "It is essential that we now appraise the methods of finance, the possibilities of new materials and of new ways of production so that the glad news of peace will find us prepared to produce the kind of home that our families will desire in the locality they wish to live for the price they can afford to pay. We trust that this 3-day conference will serve as a springboard for such stock-taking."

Probably never before have so many persons representing all interests of the housing industry been brought together for discussion. Delegates included contractors, prefabricators, material manufacturers, architects, bankers, municipal and federal and state public officials, labor representatives, social workers and city planners.

"Housing will be the stimulus of a great postwar prosperity," declared Henry W. Kaiser, industrialist, in a talk at the banquet session. He lauded

(*Continued on page* 10)



Press. Assn. Photo

Two battalions of Seabees back from the Pacific

Fifteen hundred Seabees of the First and Second battalions, first two Navy construction units organized, landed in San Francisco March 7 after 23 months in the South Pacific.

Greeting the cheering Seabees as their ship nosed into the dock to the accompaniment of three bands, were San Francisco's Mayor Roger Lapham, Rear Admiral C. H. Cotter, director of the Pacific division, Yards and Docks, and other high-ranking Navy officials.

The First Battalion, commanded by Lieut. Frank Schieppi, was cited by Admiral Nimitz for its record-time erection of a secret airfield at Espiritu Santo. Admiral Halsey cited the First Battalion for installations at Tonga Tabu that enabled first American troops to move into the South Pacific.

The Second Battalion, under Lieut.-Commander E. A. Duncan, was cited by the Marines for its work under "difficult conditions."

Large appropriations are acted upon for river and harbor projects

H.R. 4183 passes both houses and Senate amendments are now being considered. A total of $53,000,000 for Corps of Engineers work, mostly for maintenance and operation

The 1945 War Department Civil Functions Appropriation bill, H. R. 4183, was passed March 9 by the Senate and referred to the House for consideration of Senate amendments. One of the most important provisions is made by Senate amendment, and would bar the War Production Board from passing on the merits of irrigation, drainage, and flood-control projects referred to WPB by the secretaries of War, Interior, or Agriculture, or by the War Food Administrator. WPB authority in such cases would be limited to passing on questions of the availability of materials and manpower.

Irrigation projects

The amendment specifically empowers the Bureau of Reclamation and the Corps of Engineers to construct or complete any irrigation or flood-control project for which funds have been appropriated, and which the War Food Administrator determines will increase war food production, and which he finds is feasible "in the light of the available manpower, material, and equipment." The provision refers both to projects started and those not yet begun.

The bill appropriates to the Corps of Engineers $53,044,000 for Rivers and Harbors. Of this amount, $6,244,000 was added by the Senate, which also inserted a provision for preparing plans and specifications for projects, whether or not yet authorized.

The Corps had asked for $2,000,000 for advance planning for river and harbor projects, but this item had been taken out by the Bureau of the Budget before reaching Congress.

The bill continues the availability of more than $700,000 of unobligated 1944 funds to meet contingent demands for river and harbor work and repeals the rest of the unobligated 1944 balance in a similar amount.

Of the new money appropriated for river and harbor work, $3,630,000 is intended for improvements in the following amounts:

Gulf Intracoastal Waterway between Apalachee Bay, and the Mexican border	$80,000
Mississippi River between the Ohio and Missouri Rivers	1,000,000
Missouri River, mouth to Sioux City, Iowa	2,000,000
Ohio River open channel work	100,000
Kanawha River in W. Va.	200,000
Illinois Waterway in Illinois	250,000
Maintenance of rivers and harbors	28,382,000
Operation and care	11,400,000
Examinations, surveys and contingencies	2,000,000
Miscellaneous items	1,438,000

The six projects for which appropriations are made were selected by the Corps of Engineers from a list of 72 which constitutes a back log of work for postwar construction, and would cost over $163,000,000.

To complete all river and harbor projects which have already been authorized by Congress, General Reybold, Chief of Engineers, said at a House Committee hearing, would cost $235,851,415. Of this amount, $72,581,865 would be required for completion of authorized projects which have been delayed for various reasons.

Flood Control

Flood-control work amounting to $47,960,000 has been halted during the war, it was brought out by Engineer Corps figures at the House hearings.

Expenditures for flood control authorized by the act include $26,000,000 for flood control on the Mississippi River and its tributaries, of which $1,000,000 was added by the Senate; $500,000 for emergency flood control on tributaries of the Mississippi; and $2,800,000 for flood control on the Sacramento River in California.

Expenditures of $12,983,330 have been made on plans and preliminary work on a postwar list of over 130 projects, according to figures presented at the hearings by Gen. Reybold. An additional $18,000,000 is needed, the general said to complete plans and specifications for these projects. Added funds are also needed to complete plans for another 42 authorized projects; and there are 23 authorized projects to cost approximately $8,000,000, for which no planning funds at all have yet been made available.

New projects proposed

This Civil Functions Bill has no connection with H. R. 3961, known as the omnibus rivers and harbor bill, which is pending in Congress, and which authorizes postwar improvements of rivers and harbors in an amount of $429,000,000; and which further authorizes the making of preliminary surveys for a large number of additional proposed projects, but which makes no appropriations.

• • •

Truck mixer makers set up standards bureau

A Truck Mixer Manufacturers Bureau has been organized by the equipment makers in that field under the sponsorship of the National Ready Mix Concrete Association. The bureau is the result of four years' effort on the part of truck mixer manufacturers to form an association to deal with the technical problems of the manufacturers and users of truck mixers. Bylaws of the bureau limit its activities as follows:

A—To effect standardization of truck mixers with a view towards simplification and standardization of sizes and capacities as well as other mechanical standards associated with the manufacture and use of truck mixers.

B—To provide an organization through which the members of the bureau may join in giving suitable public notice, by advertising and otherwise, to its efforts to produce economies for the manufacturers and users of truck mixers as well as for the general public.

The following firms are charter members: Blaw-Knox Co., Chain Belt Co., Concrete Transport Mixer Co., Jaeger Machine Co., Ransome Machinery Co., and the T. L. Smith Co. Officers include H. C. Peters, (T. L. Smith) chairman; A. A. Levison (Blaw-Knox) secretary; and T. H. Fleming (Concrete Transport Mixer Co.) treasurer.

A technical committee of the bureau consists of: L. G. Hilkemeier (Chain Belt) chairman; L. J. Sarosdy (Blaw-Knox); T. H. Fleming (Concrete Transport Mixer Co.); C. I. Bohmer (Jaeger); J. P. Faber (Ransome); and R. J. Barnes (T. L. Smith).

ENGINEERING NEWS-RECORD. Published every Thursday. **Return postage guaranteed.** Vol. 132, No. 11. Price 25c per copy. Allow at least ten days for change of address. All communications about subscriptions should be addressed to the Director of Circulation, 99-129 N. Broadway, Albany, 1, N. Y., or 330 W. 42nd Street, New York, 18, N. Y. Subscriptions, United States, U. S. Possessions and Latin American Republics, $5.00 for one year, $8.00 for two years, $10.00 for three years. Canada, $6.00 for one year, $10.00 for two years, $12.00 for three years. Great Britain and British Possessions 60 shillings for one year, 120 shillings for three years. All other countries, $9.00 for one year, $18.00 for three years. Entered as second-class matter October 29, 1936, at the Post Office at Albany, N. Y., under the Act of March 3, 1879. Printed in the U.S.A. Cable Address: "McGrawhill New York." Member A.B.P. Member A.B.C. Copyright 1944 by McGraw-Hill Publishing Company, Inc., James H. McGraw, Founder and Honorary Chairman; James H. McGraw, Jr., President; Howard Ehrlich, Executive Vice-President; Mason Britton, Vice-President; Curtis W. McGraw, Treasurer; Joseph A. Gerardi, Secretary; J. E. Blackburn, Jr., Circulation Manager. **Publication office: 99-129 North Broadway, Albany, 1, N. Y. Editorial and Executive Offices: 330 West 42nd St., New York, 18.** District Managers and Branch Offices: Fred G. Hudson, 520 N. Michigan Ave., Chicago, 11; J. W. Otterson, 68 Post St., San Francisco, 4; Aldwych House, Aldwych, London, W. C. 2, England; Washington; J. M. Spackman, New York; A. B. Cozzens, Philadelphia; E. E. Duff, Jr., Cleveland; B. F. Horn, Detroit and Chicago; Richard Y. Fuller, St. Louis; R. N. Phelan, Los Angeles; J. I. Ballard, Boston; Ralph Maultsby, Atlanta, Ga.

Illinois asphalt paving industry holds first state meeting

City, county and state highway officials study modern methods of pavement construction and resurfacing with asphalt

A variety of current problems in connection with the use of asphalt for street and highway paving were considered at a conference held in Springfield, Ill., Feb. 23-24. The first of its kind to be held in that state, the conference was sponsored by aggregate producers, contractors, testing laboratories, equipment manufacturers and material suppliers. The Asphalt Institute organized and took the responsibility for the technical program, furnishing some of its experts as speakers. Other men on the program included city and state engineers versed in the use of asphaltic materials.

In welcoming the 425 assembled men of the conference, Herbert Spencer, president of the Asphalt Institute stated that asphalt has a vital place in the construction and maintenance of roads and streets during the present wartime emergency.

Pavement rehabilitation

An outline of the latest methods of pavement rehabilitation, was given in detail by Bernard E. Gray, general manager and chief engineer of the Asphalt Institute. We hear a lot about postwar highway planning, said Mr. Gray, but one important problem is to provide for existing traffic in many important industrial and agricultural areas, now, and of doing this so it will fit in with the postwar plans for improved highway.

One of the most economical methods for salvaging existing pavements, stated Mr. Gray, is to construct a new surface with asphaltic concrete. Some states have resurfaced as much as 70 percent of the original portland cement concrete pavements by such means. California, with 1,634 mi.; North Carolina, with 1,604 mi.; Virginia, with 1,684 mi.; and Ohio, with 2,378 mi. are among the states that have placed asphaltic concrete on a large scale, he said.

Road-mix surfaces

Two types of road-mix asphalt surfaces, the coarse-graded aggregate type employing crushed stone, gravel or slag and the dense-graded type involving sandy gravel, are the very backbone of many Mid-Northwestern state highway systems, said Mr. Gray. These types increased from 35,000 mi. in 1933 to over 100,000 mi. in 1943. Another popular pavement is asphalt penetration macadam construction, consisting of a substantial macadam base carrying 3-in. of well-keyed rock and penetrated with about 2½ gal. of hot asphalt cement per sq. yd.

In resurfacing old portland cement concrete pavements, two major conditions are found, according to Mr. Gray. One is where the pavement can safely support traffic but here scaling and excessive cracking exists, and the other is where the old pavement is of inadequate structural strength, which results in progressive breakdown in the surface. In the first case, the problem is to waterproof the surface to prevent scaling and to stop entry of water through the pavement cracks and joints. In this work the surface should be swept clean and a prime coat applied to seal all small cracks against the rise of capillary moisture as well as to insure bonding the old pavement to the resurfacing. When resurfacing is less than 2½ in. thick, said Mr. Gray, a flexible type mixture, using 85-100 penetration asphalt, will lessen any movement of the old pavement from affecting the surfacing.

The main problem of resurfacing, however, stated Mr. Gray, is that found under the second condition; for old pavements with many broken areas. Concrete patches should not be richer in mix than the old pavement since the expansion and contraction of the new concrete will produce cracks which tend to be reflected through the resurfacing. In fact, there is no point in making patches with a mix richer than 1-3-6, he declared. That uniformity of the old supporting base is most essential was emphasized by Mr. Gray, and he advocated breaking up uncracked areas of the old slab where broken areas are numerous, before applying the resurfacing.

When resurfacing old portland cement pavements, any existing asphalt patches should be removed unless they are hard and dried out, according to Mr. Gray. All cracks and joint material should be removed where possible. This material can be heated with a blow torch and removed with flattened hoes. Often it can be done merely by scraping. The next step is to prime the old surface with either a cutback or emulsified asphalt, particularly at cracks and joints and over all broken areas.

Instead of the usual practice of applying a first course of coarse-graded asphaltic concrete, Mr. Gray strongly advocated that first, all cracks and low areas be filled with a fine graded mixture such as sheet asphalt, placed hot, and immediately rolled with a 10-ton roller. This mixture can be squeezed into the cracks and shallow areas much better than a coarse mixture and its denseness will prevent water entering either from above or below. Following

(*Continued on page 7*)

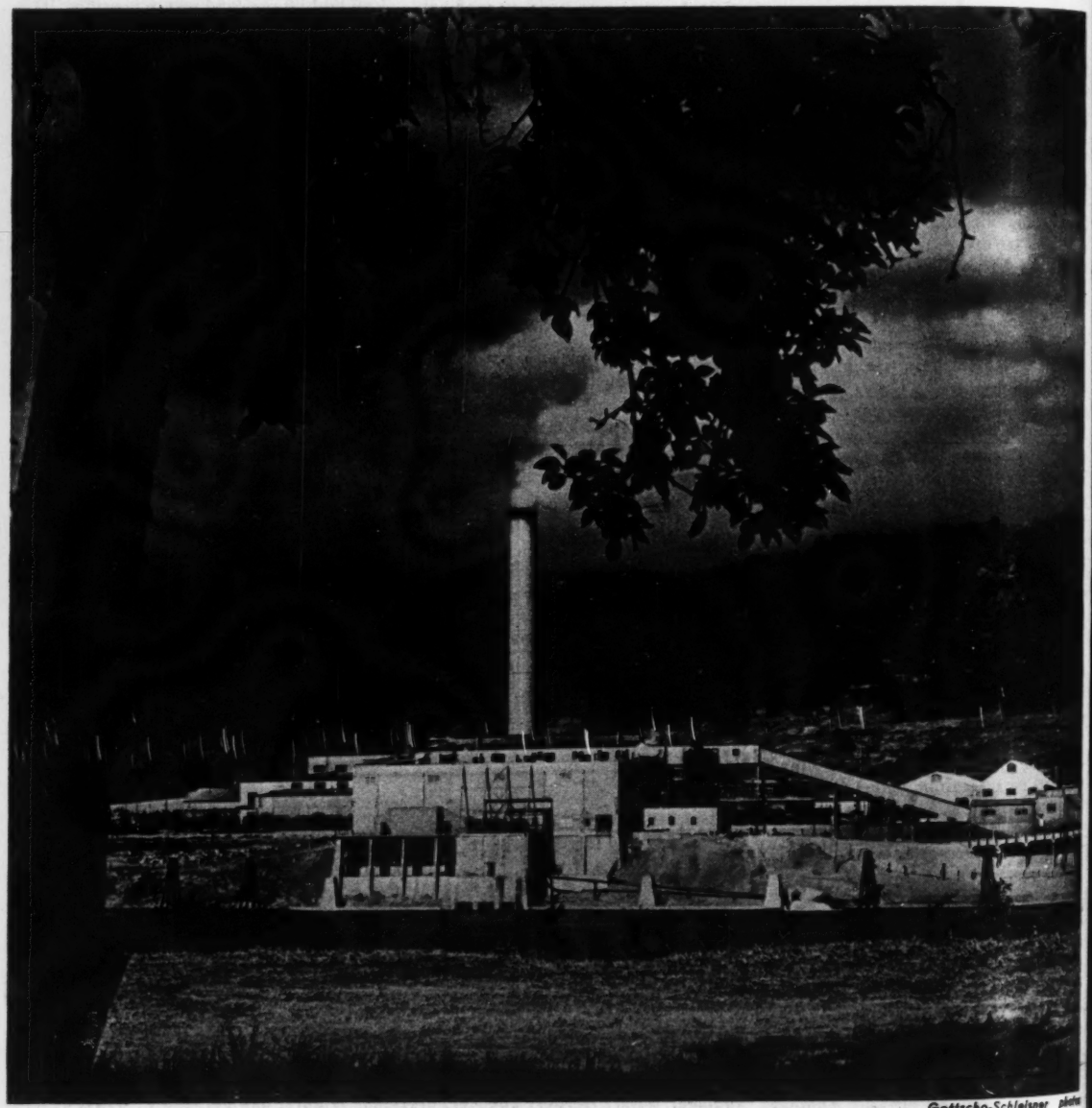
Prominent authorities on asphalt construction in attendance at the first meeting of the Illinois asphalt industry include: Harold B. Pullar, vice-president, Berry Asphalt Co., Chicago (standing, center), flanked by Provost Hubbard, chemical engineer (left); Herbert Spencer, president (right); and Bernard R. Gray, general manager and chief engineer; all of the Asphalt Institute, New York.

Giant War Plant Goes Into Operation

Believed to be the largest plant of its kind to be built east of the Mississippi River as a single project, a huge chlorine plant has been placed in operation on the Ohio River at Natrium, W. Va., 40 miles below Wheeling. The project consists primarily of a powerhouse and six manufacturing buildings, the latter providing a total floor space of nearly 200,000 sq. ft. Capacity of the plant cannot be given due to war restrictions.

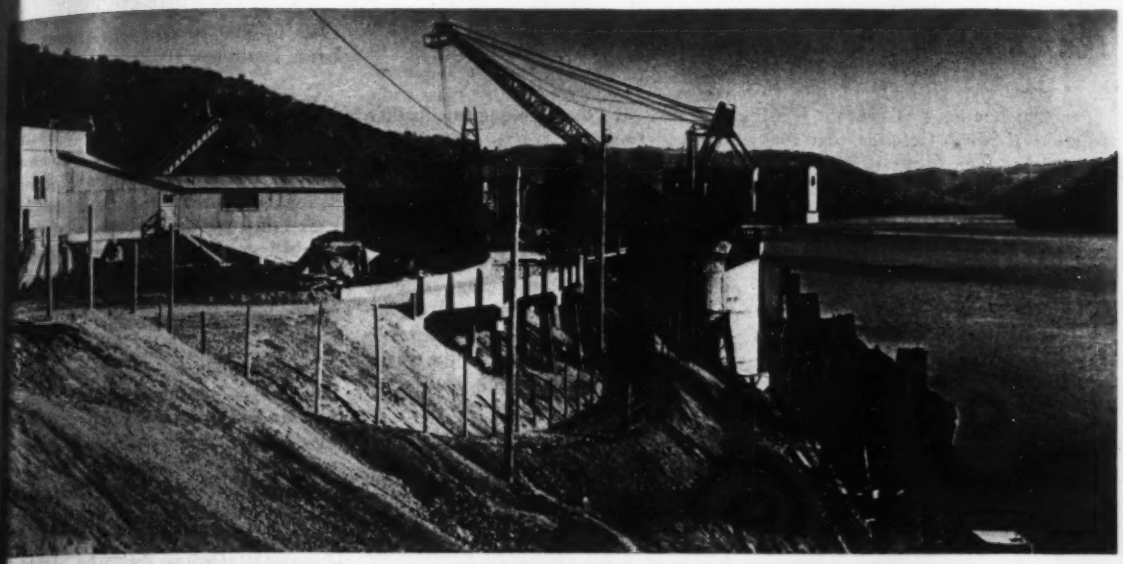
Construction of the foundations for the powerhouse (Fig. 1), which has a total floor area of 65,000 sq. ft., was one of the major problems, as this work had to be done with the river frequently at the highest stage in several decades. Floods and ice often delayed the job three weeks at a time.

The foundations consist of four reinforced concrete caissons sunk to rock. Averaging 40 ft. in depth and 14x20 ft. in plan, the caissons are sealed at the bottom with an 8-ft. thick slab. This design permits their use as river intakes for the immense quantities of water required for operation of the plant. To assure firm anchorage of the caissons, about 100 steel bar dowels of 2½-in. dia. were driven to an average depth of



Gottscho-Schleisner photo

Fig. 1. Recently placed in operation was this huge chlorine plant on the Ohio River at Natrium, W Va.



g. 2. Extensive coal handling facilities were required. Delivered by river barge, the coal is stockpiled above a loading pper by a revolving electrical crane. A belt conveyor delivers the material to the crusher.

ft. in the bed rock. The caissons were pped with a 6-ft. thick reinforced-con-ete mat, which supports foundation lls and footings for the building.

The boiler plant supplies all of the am for generating electrical power, ocess equipment and heating. It con-ts of three 900-lb. boilers each with hourly rating of 180,000 lb. of steam 750 deg. F. A complete feedwater ating unit is located adjacent to the iler room, the floor of which is well ove normal flood level.

Power generating equipment consists two 7,500-kw. condensing, turbine-iven generators and one 10,000-kw., e 7,500-kw. and one 1,500-kw. non-ndensing, turbine-driven units. In the sement are three turbine driven boiler ed pumps; one turbine driven and two ctric driven condenser water pumps; e crushers and pumps for the ash icing systems; air compressors and cuum pumps.

Largest of the manufacturing build-gs is the chlorine building with more an 100,000 sq. ft. of floor space. The stic manufacturing building has out 50,000 sq. ft. of floor space, the ministration building 11,000 sq. ft. d the employment office 7,500 sq. ft.

To overcome danger to the coal barges d to the dock from ice jams, two mas-e concrete ice breaker piers were nstructed about 300 ft. upstream. They tend 100 ft. into the river.

The plant was designed and engi-ered by Columbia Chemical Division Pittsburgh Plate Glass Co., which will o operate the facility. The H. K. rguson Co. was responsible for con-ruction and equipment installation. e project was financed by Defense lant Corporation.

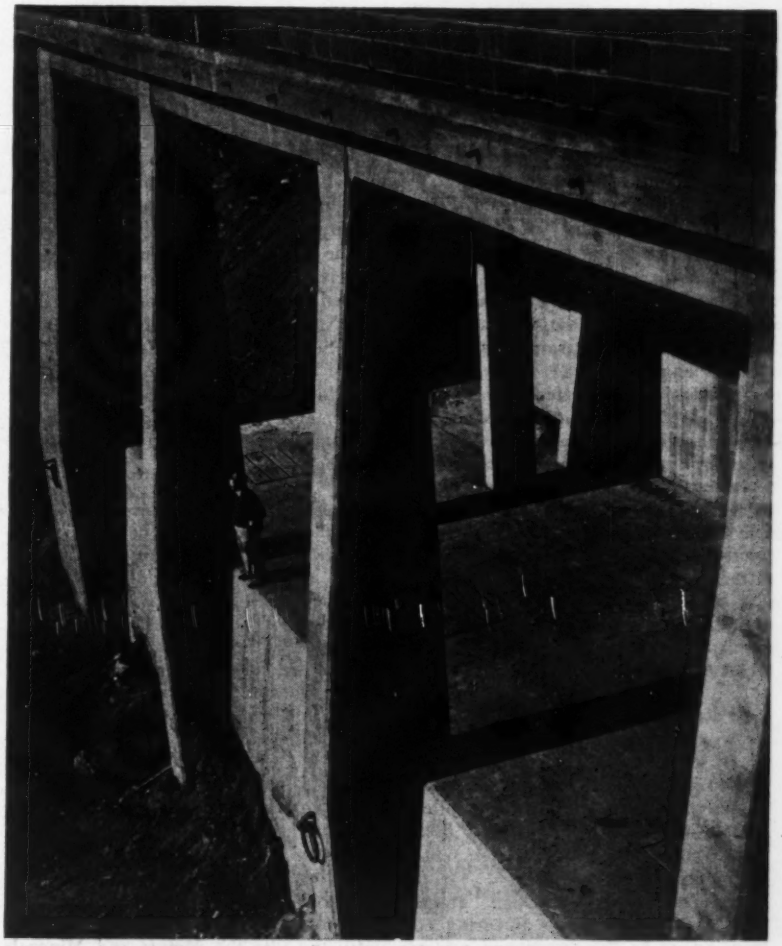


Fig. 3. Above the intake galleries, concrete columns of unusual design were built to withstand the ravages of ice and floods. The trap doors in the slab on which the workman is standing permit inspection of the equipment and piping of the water supply intake system.

News of the engineering schools

A recommendation by Governor J. M. Broughton of North Carolina that consideration be given to the expansion of the Engineering School of the North Carolina State College at Raleigh, N. C., was approved by the board of trustees of the University of North Carolina at a meeting at Chapel Hill, N. C., Jan. 31. Governor Broughton in making the request specifically recommended that "a great engineering building" be constructed "to house the general engineering branches of the institution," asserting that "the buildings and facilities for this purpose at present are totally inadequate." He recommended that the board give immediate consideration to plans for an adequate engineering building at State College and for the general enlargement and development of this school in all its branches.

Enrollment of college students will reach an all-time high in the years immediately following the war, Livingston W. Houston, executive vice president of Rensselaer Polytechnic Institute, predicts. He forecasts that enrollment increases will be heaviest in engineering and science courses.

"I learned recently," he said, "that one university, having no engineering school, canvassed 377 trainees in a military training program on its campus and found that nearly half planned to go to college after the war and that more than 80 percent said they wanted to study engineering.

"This is just one instance of how the spectacular and dramatic achievements of engineering and science in the war have captured the imagination and interest of young men. Because this is a mechanized war, with amazing scientific devices and engineering feats, thousands of service men have become attracted to engineering and science and many will return to become engineering students. We shall have larger numbers of entering freshmen interested in engineering."

A drastic postwar change in engineering educational methods, which would send prospective students directly into industry to obtain practical experience before beginning their college studies, is envisioned by George F. Bateman, dean of the Cooper Union school of engineering.

Under such a system, Dean Bateman says, the function of engineering colleges would be "to adjust and prepare for advancement, rather than to prepare for employment." It would be desirable, he adds, to have students return to industry at intervals during the collegiate course to acquire further practical training.

The experience of teachers of engineering with young men from industry who have taken special wartime courses has made it clear, according to Dean Bateman, that such students generally are far ahead of the average student in appreciation, response, and understanding. This, he points out, raises the question: "Why continue the wasteful, ineffective training of adolescents whose contact with industry is nil?"

V. B. Higgins, contractor of Greensboro, N. C., and a graduate of Clemson College, S. C., in civil engineering, 1910, has established the "V. B. Higgins Engineering Fund" and sent a check for $20,000 to that college as an initial contribution, to be used for scholarships, promotion of research in engineering and the promotion of engineering education.

Labor Minister Mitchell of Canada has announced the setting up of a university board to advise the Department of Labor on manpower problems affecting universities in wartime. Students now are allowed to complete their first undergraduate year. One of the duties of the new board will be to decide on policies to be recommended for advanced study for undergraduates. Arthur MacNamara, director of National Selective Service, will be chairman of the board and Sidney Smith, president of the University of Manitoba, will be vice-chairman. H. W. Lea, director of the wartime bureau of technical personnel, will be secretary.

Organization of the Stevens Research Foundation, a non-profit corporation for scientific and industrial research and related educational purposes, was announced Jan. 21 by Harvey N. Davis, president of Stevens Institute of Technology. The foundation is an outgrowth of the extensive program of research which Stevens has carried on in recent years and which has expanded greatly during the war.

The Illinois Institute of Technology, Chicago, has broken ground for the second permanent unit of its $3,100,000 campus development program. The building will house the Armour Research Foundation's automotive research laboratory. The first building constructed was the Metals and Minerals Research building.

Completion of the entire project will make possible a consolidated campus for the college, which was formed in 1940 by the merger of Armour and Lewis institutes.

Prospects of an early opening of a new college of engineering at the University of California at Los Angeles are seen by University President Robert G. Sproul. A special committee has been examining the qualifications of distinguished engineers for deanship of the new college, which will place initial emphasis on the practical aspects of aeronautical engineering.

Precision slide rules are to be made available to advanced civilian engineering students, the Government Division of the War Production Board has announced. This action does not concern the Army and Navy college training program. Students leaving school will be requested to return the precision rules for resale. Orders are to be placed for minimum needs by the deans of engineering in qualified institutions. Orders must bear certification that the instruments are needed by advanced students.

• • •

Social research school to study prefabrication

An unnamed donor has given $50,000 to the New School for Social Research for further development of a new system of demountable housing considered particularly suitable for military and postwar rehabilitation work, Alvin Johnson, director of the school, has announced.

The fund will make possible a study of housing and its structural details under the direction of Paul Lester Wiener, architect and designer, who with J. L. Sert, town planner, recently devised the building method known as "ratio structures."

This system, an adaptation of standardization of parts to the mass production and prefabrication idea, is being utilized in a war housing and community center project started by the Federal Public Housing Authority at Sidney, N. Y.

Mr. Wiener's research co-workers at the New School will include several engineers. Their study will involve experiments and tests to develop designs for "basic universal parts" of structures suitable for quantity manufacture. These parts would be convertible and demountable.

Studies also will be made in the possibility of utilizing the system for small private homes as well as for mass housing in the postwar period when there is likely to be a very considerable demand for new living accommodations.

Asphalt meeting

(*Continued from page* 3)

this treatment, a foundation or binder course of standard coarse-graded, but dense, asphaltic concrete should be applied to the proper cross section and gradient, he said. The surface course that completes the resurfacing will then be completely uniform and smooth.

Regardless of the thickness of resurfacing, it should be placed in two or more layers, declared Mr. Gray. This costs very little more and has very definite advantages. The thinner layers can be spread and rolled to a uniform density. Any slight irregularities can be corrected as the succeeding layers are constructed, resulting in a completed cross section having no differential settlement despite variable thickness of the resurfacing due to irregularities in the old pavement, he concluded.

Bearing tests on pavement

Preliminary plans for a cooperative study of asphalt pavements under load were outlined by Prevost Hubbard, chemical engineer of the Asphalt Institute. The study is to be carried on jointly by the Highway Research Board, the Public Roads Administration and the institute. By means of full scale load bearing tests it is proposed to obtain fundamental data on the load supporting value of asphaltic concrete pavements of many thicknesses laid over base courses of various thicknesses and with varying degrees of subgrade support. The first test track is to be at Hybla Valley, Va., not far from Mt. Vernon, on property belonging to the Public Roads Administration.

Roadbuilding by stage construction

Stage construction of metal surfaces is being employed on large mileages of county roads and for many city streets throughout Illinois, according to Geo. H. Baker, engineer of county roads and city streets, Illinois Division of Highways. There are three chief steps in this stage construction, each of which employs asphaltic material in varying degrees, he said. One example involves getting the section of road out of the mud as soon as possible. To do this, the road is graded and drained and surfaced with a small amount of stone, with a small quantity of asphaltic oil being applied to prevent loss of surfacing material and to eliminate dust. Another variation of stage construction, said Mr. Baker, is employed in the more progressive programs which includes grading and graveling certain roads one year, adding a dustless surface the next, while grading and graveling others.

A third example is stage construction on roads where there is a possibility of the need for heavy duty rigid pavement but no assurance of it. This applies where future traffic needs cannot be gauged accurately. Under this plan, declared Mr. Baker, a small amount of metal is applied and treated with bituminous material in such a manner that additions of the same type of material can be made up to a thickness which will carry the increased traffic. This type of construction also has the advantage in that it may be abandoned at any stage and a rigid type built with a minimum of loss if it develops that a heavy-duty, rigid pavement is required, he said.

State highways of asphalt

In discussing the development of bituminous roads on the Illinois state highway system, Wesley W. Polk, chief highway engineer, Division of Highways, pointed out that the state's 2,000 mi. of bituminous roads on its secondary highway system are well distributed over the state, providing good roads for small communities and agricultural areas. This construction consists of asphaltic mats using both open and dense graded aggregate, treated with both cutback and slow curing asphalts. Both road-mix and plant-mix construction have been specified, said Mr. Polk, but observations disclose that plant mixtures have given more satisfactory service.

In 1942, the state placed a considerable amount of resurfacing under traffic without a prime coat, as it was thought that it would be entirely too difficult to prime the pavement under traffic, said Mr. Polk. However, it was necessary to prime one of the pavements before the resurfacing, and much to everyone's surprise the contractor was able to place a prime coat in a checkerboard application, filling in the unprimed areas the following day without any particular inconvenience to traffic. This experience caused prime coating to be specified for all resurfacing, he said.

The last session of the two-day meeting was given over to an open forum on technical and detail problems confronting city, county and state highway engineers engaged in the construction and maintenance of city streets as well as county and state roads by the use of bituminous materials. H. B. Pullar, vice-president, Berry Asphalt Co., Chicago, and general chairman of the conference, presided at the forum, assisted by several experts in the asphalt industry. A highlight was an account by J. A. Williams, superintendent of public works in the village of Glencoe, Ill., of expedients adopted to meet the destruction of street surfaces due to recent abnormal increases in traffic.

Bureau of Reclamation promotion for Douglass

L. R. Douglass, who has been senior engineer with the Bureau of Reclamation at Denver, Colo., has assumed new duties as chief, Engineering Division of the Washington office of the bureau. He succeeds Wesley R. Nelson, who, in connection with the bureau's decentralization move, was transferred to Amarillo, Tex., as head of Region 5 (*ENR*, Dec. 9, 1943; p. 857).

Mr. Douglass is a graduate of the College of Engineering, University of Colorado. His first engineering work was in northern New Mexico and Colorado, in connection with irrigation and coal mining. During the first World War he served as captain in the Construction Division of the U. S. Army. From the close of the war until the beginning of his service of 11 years with the Bureau of Reclamation, he was in private practice as a civil engineer.

• • •

Flood control work starts on Rio Grande

Work of repairing levees and other flood control structures on the east bank of the Rio Grande from a point immediately south of Albuquerque, N. Mex., to Belen is scheduled to be started soon with Stavely and Kendall of Kansas City, Mo., as the contracting engineers.

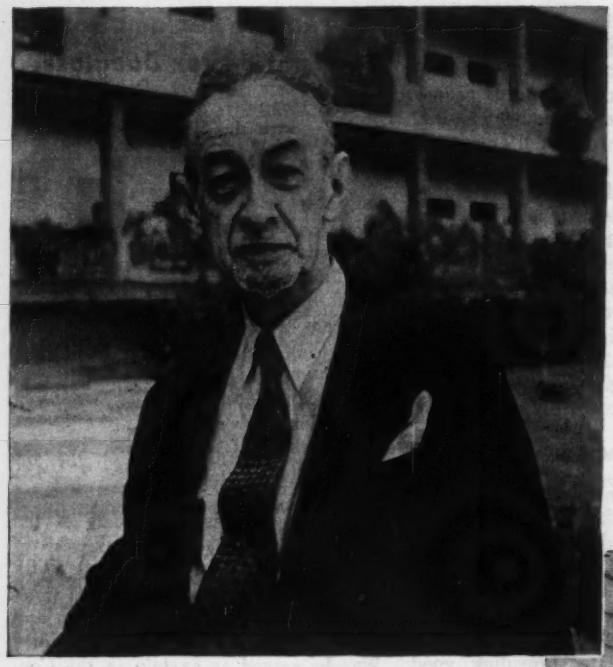
The project is a part of an emergency flood control program recommended for that area by Col. R. E. Cole, district engineer, Army Engineers, and will cost about $158,300. Work is well under way on another portion of the project extending in the opposite direction from the point where the new work is to be started. Contractor for the first portion is Henry Thygesson of Albuquerque.

• • •

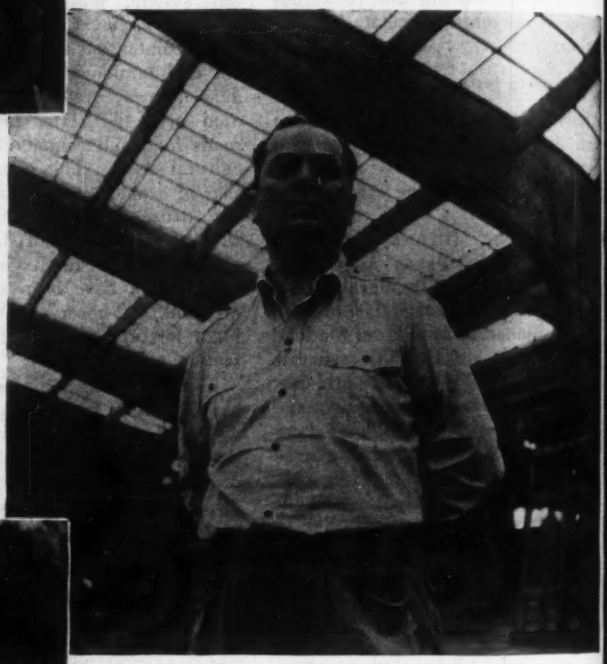
Kaiser may branch out to South America

Indication that Henry J. Kaiser intends to extend an arm of his vast organization into South America is seen in his recent announcement that a party of Kaiser delegates will leave this week to make a survey in Venezuela, where undeveloped deposits of iron ore are known to exist. He has named George Havas, chief engineer of all Kaiser enterprises, to head the delegation.

MEN AT WORK In South America



GEORGE C. BUNKER, (left) dean of North American sanitary engineers working south of the border. For more than three decades he has been engaged on water supply and sewerage developments, and is at present employed as consultant to the National Institute of Sanitary Works in Venezuela.



BRIG. A. GUEDES NUNIZ of the Brazilian Air Forces, (right) who is directing construction of a national motor factory near Rio de Janeiro. Scheduled to go in operation on April 19, this factory will be the first in Brazil to produce airplane engines. Brigadier Nuniz spent several years studying American industrial design before starting work on this government project.

MAJOR A. J. KRANASKAS, (left) Sanitary Corps, who is chief engineer of the American sanitary mission representing the Office of the Coordinator of Inter-American Affairs at Montevideo, Uruguay. Formerly associated with the West Virginia state health department, he served for one year in Bolivia prior to his assignment to Uruguay.

R. JOHN LONG, (below) senior travelling repre-ntative of the Pan-American Sanitary Bureau, who rects engineering and related activities from an ice in Lima, Peru. An adviser on sanitation prob-ms to virtually every government in South America, r. Long has been in this post since 1924.

ief engineer of the Rio de Janeiro water system Alberto Pires Amarante, under whose direction s the operation of 80 different sources of supply; reservoirs and 17 pumping stations. Still in use is tone arch aqueduct built in 1750.

G. SPAULDING, (right) chief engineer of the rvian Portland Cement Co., outlines operations at Lima plant for SENATOR A. F. DASSO, of the ional government. Senator Dasso, a graduate of tt Institute, Brooklyn, is associated with the direc-n of many engineering operations in Peru.

ROBERTO PEREIRA DE ALMEIDA, assistant engineer, and ARNOLDO DUMONT VILLARES, chief engineer and member of the firm of Severo, Villares and Co., Ltd., of Sao Paulo, largest firm of architects and engineers in Brazil. An account of Mr. Villares' daring achievements in jacking a 24-story office building into plumb after one corner had settled two feet was given in ENR Oct. 21, 1943, p. 623.

Housing conference

(*Continued from page* 1)

the purpose of the convention in bringing together so many factions interested in housing, and declared the problem was big enough to require the cooperation of all. He said "It is not enough to say the housing situation is solely the concern of the government. No matter where the responsibility lies, housing must be provided. It must be carefully planned and properly financed. It can be done. The task will be accomplished in some part by individual initiative. But the undertaking is so vast that there must be a joint effort in which the federal government, states, municipalities, banks, labor unions, insurance companies and industry take an active part." Kaiser told of a "dream city" built in 90 days by his organization to house 35,000 people. This perfect city, he believes, with all the requirements for comfortable, cheap, pleasant living will be the pattern for many similar developments in the future.

Mr. Kaiser takes a broad view on future materials, "As to men, skill and materials, there is no problem. The old standbys of stone, concrete, steel, wood, lime and plaster are quite apt to survive all the innovations. Never-the-less, new adaptions of metals, plastics and other synthetic products are sure to be employed, and provide improvements that defy imagination. As to the method of construction, many modern homes will be built with stone, brick and timber, after the established practice of the building trade. Unquestionably, some houses will be prefabricated, delivered to the building lot ready for assembly; also portable dwellings, easily set up and dismantled, will be available for pioneers and transients seeking new opportunities."

Blandford wants unity

John B. Blandford, Jr., National Housing Agency administrator, called for unity in meeting the housing problem, unity in government, among producers, workers, employers, farmers and industrialists.

"This meeting," he said, "is a token of the desire and the firm resolve to retain and strengthen housing unity. All here today represent housing interests, in one way or another. In fact, everybody comes under that classification because we all live in houses. In peace, no less than war, we cannot cement this housing unity or build upon it if each individual or group approaches the housing problem primarily from the standpoint of its own isolated interest. The first task is to appraise this postwar housing need. It cannot be measured with a ruler because it depends upon values as well as facts. It depends upon certain fundamental questions about the kind of economy and the kind of American society that we aspire to after the war."

Mr. Blanford went on to say that, "the home building industry likewise has a vast postwar preparation task. In the past, its market has been restricted, because it did not serve millions of families of low income or lower middle class incomes who are in need of decent housing. The industry must study and learn how to build better houses at lower cost for more people. They must initiate and improve construction technique, additional financing devices, and more imaginative neighborhood planning."

Labor's position

In a telegraphed statement, R. J. Thomas, president of the U.A.W. and chairman of the national C.I.O. committee on housing, declared that public aid should be given to private enterprise to meet the nation's housing needs and to provide full employment. But public aid to private enterprise must be conditioned on the return of the maximum public benefit, which means a definite control must be retained by the government. This aid should include substantial reduction in mortgage interest, longer period of amortization, assistance in the acquisition and assembly of suitable land and housing to be used as part of the public works insurance program against possible critical postwar unemployment to the greatest extent possible.

M. H. Hedges, director of research, International Brotherhood of Electrical Workers, in reviewing the building tradesmen's viewpoint on new materials and new methods, declared that technological changes are a big problem for labor to consider in postwar housing. He asked how one-tenth of the construction industry can be converted from a decentralized handicraft industry seeking to preserve manual skills into a highly centralized mass production industry tending to do away with handicraft without resulting in strains, differences of opinion and some conflict. He declared that shifting of site workers to factory-production of prefabricated units can be done if the manufacturers would deal with building trade unions and will reach an understanding before any agreements were signed that would preclude jurisdictional disputes.

Mr. Hedges denied that unions have restricted or halted technological change, especially the electrical workers. But, he went on to say, the electrical workers and other unions believe that technological change should not be ushered in as a whim of the moment—willy-nilly, without discussion, conference or agreement with the union. Lashing out at industry for "policy maneuvering, flank attacks and unfrankness," he said, "I believe there is no problem, however grave or however pervasive, which cannot be solved by conference, free discussion, the play of mind and scientific method over perplexing riddles. We could reach a point of all-out use of the conference method. Prefabrication or any other technological innovation can be handled with dispatch and for the good of the industry and the consumer."

Prefabrication's claim

John C. Taylor, Jr., president, American Houses, Inc., New York, declared prefabrication is the only method to stabilize the cost of housing, for only by this method are all costs definitely known in advance.

Said he, "The house of tomorrow will be prefabricated on assembly lines. Those parts requiring elaborate machinery and large inventories will be produced in a few central plants shipping to an area up to a 750-mile radius. The simpler and heavier parts requiring less machinery and smaller inventory will be produced in plants covering a shipping area of 200-mile radius. In the postwar period prefabrication will be adopted to some extent in close to 100 percent of all homes built. The percentage of each house that will be prefabricated will be determined by the number of operations that can be performed more efficiently in a factory than at the site. Introduction of new materials will call for additional operations that cannot be performed at the site, which means that through the years the percentage of prefabrication will grow."

Improving construction methods and practices at the site rather than prefabrication was advocated as the best way to reduce the cost of housing by David D. Bohannon of San Francisco. "Factors of high cost for small homes," he said, "are high improvement and land cost, inefficient use of manpower in converting raw materials into finished houses, practices within the building industry, and the resistance by labor to labor-saving devices."

Whims increase inventories

"The whims of owners, architects and builders have required inventories of thousands of different items to be kept by supply houses," continued Mr. Bohannon. Standardization of building products brought about by the war has helped this wasteful situation, he declared, but we can still go much further.

(*Continued on page* 12)

Soil "waterproofed" and stabilized with new type resin compound

Stabinol produced by Hercules Powder Co. treats soil to resist surface water penetration and capillary rise of moisture.

A new resin compound, small quantities of which added to soil will impart "waterproofing" qualities, has been announced by the Hercules Powder Co. as offering a cheap and time-saving method for soil stabilization in road and other types of construction. Called Stabinol, the material is a byproduct of rosin distillation with which other unrevealed chemicals are combined. The material is supplied in dry powder form.

Similar in use and action to Vinsol resin, previously developed for road stabilization by the Hercules Co., Stabinol is said to be applicable over a wider range of soils than Vinsol resin. Construction methods and details of Vinsol resin stabilization were outlined in *ENR* May 7, 1942, p. 777. A change in methods of application is recommended for Stabinol, it being mixed with the soil in powdered form instead of a slurry as was done in some applications of Vinsol resin.

Stabinol can be used successfully in a wider range of soils than could be treated successfully with Vinsol resin, but it is not effective in all soils. It works best in soils with at least 10 per cent of clay to provide a binder as Stabinol adds no binding qualities to soil.

In a demonstration of the product in New York City on March 8, it was stated that as little as 1 to 2 percent of Stabinol mixed with soil and then compacted to optimum compaction will render the soil impervious to the penetration of surface water, as well as resistant to the capillary absorption of moisture from below. Thus it is claimed to be ideal for the stabilization of unsurfaced dirt roads—preventing them from becoming muddy and rutted after heavy rains—or it can be used to secure a stable earth base for roads paved with other materials.

Other suggested uses for Stabinol treatment lie in its employment for temporary roads on construction projects or to stabilize the soil in working areas on such jobs, as well as for airports, athletic fields and parking areas.

The stabilizer is to be marketed at a price of 2½ to 3½ cents a pound. Depending on the type of soil to be treated, from 4 to 10 lb. are required per square yard worked in to a 6-in. depth. It was said that a mile of Stabinol-treated rural road could be built for as low as $3,000, the cost of Stabinol representing about half this amount.

A.S.C.E. changes its plan for its summer convention

The place of the annual convention of the American Society of Civil Engineers has been changed from Chicago, as announced at the time of the society's annual meeting in January, to Cleveland, Ohio, July 19-21. This change was made due to the fact that the two major political conventions are scheduled to be held in Chicago some time during July and definite commitments could not be made for hotel accommodations for the A.S.C.E. meetings.

Originally, the fall meeting of the board of direction was scheduled to be held in Cleveland in connection with a meeting of the Cleveland Section. That meeting now is scheduled to be held in Denver in October in connection with a meeting of the Colorado Section to be held at that time.

The spring meeting of the board is to be held in St. Louis in connection with the spring meeting of the St. Louis Section, April 26-27.

Canadian engineers to aid reconstruction

Canadian engineers, architects and contractors are expected to have an important part in postwar construction in Canada, according to the final report of the Advisory Committee on Reconstruction to the Government of Canada.

The committee recommends the setting up of a National Development Board for the purpose of investigating and coordinating all major postwar projects involving public investment. Of special interest to engineers is the recommendation of the subcommittee on publicly financed construction, headed by K. M. Cameron, chief engineer of the department of public works of Canada, that there be set up a Federal Construction Reserve Commission to coordinate all publicly and privately financed construction work during the postwar period in order to achieve maximum efficiency.

The proposed commission would report directly to the minister of finance. For purposes of administration, Canada would be divided into five regions, the Maritime Provinces, Quebec, Ontario, the Prairie Provinces and British Columbia. In each region there would be a regional committee made up of engineers, architects and contractors with a chairman who would be an ex officio member of the advisory council to the Federal Construction Reserve Commission.

The recommendations of the Advisory Committee on Reconstruction have been presented to Parliament, which is now in session in Ottawa.

. . .

Army engineer cited for Nicaraguan work

Colonel Edwin C. Kelton, Pacific division engineer, U. S. Army Engineers, has been awarded the Nicaraguan presidential medal of merit by President A. Somoza of Nicaragua.

Col. Edwin C. Kelton

The citation and gold medal bearing the insignia of the seal of the Republic of Nicaragua were presented to Colonel Kelton in recognition of "valorous services which he performed for the republic as director of the work of the Pan-American highway section of Nicaragua—an important work realized as indispensable in the military preparation of Nicaragua in its firm intention to aid in the actual struggle for the just cause which the united nations are defending."

Work carried out in Nicaragua under Colonel Kelton's direction included construction of 150 miles of highway to connect that country with the other Central American republics.

Colonel Kelton is now serving the U. S. Army in a dual capacity. Besides being Pacific division engineer with headquarters at San Francisco, he is engineer of the Ninth Service Command with headquarters at Salt Lake City.

JOBS OF THE WEEK

AIRPORT, Indian Springs, Nevada.

U. S. Engineers, Los Angeles, Calif., awarded a contract for the construction of an airport, additional landing facilities and roads at Army Airfield No. 405, from A. D. Drum, Jr., Fallon, Nev., at $632,599.

BUILDINGS, Maywood, Calif.

U. S. Engineers, Los Angeles, Calif., awarded a contract for the construction of buildings for Air Forces Depot to Zoss Construction Co., Los Angeles, Calif., at $1,268,299.

AIRPORT, Namao, Alta.

U. S. Engineers, Edmonton, awarded a contract for the construction of an airport, including grading, drainage, hard surfaced runway, taxi strip and hangar, to Dufferin Paving & Crushed Stone, Ltd., Toronto, for the Northwest Service Command. The estimated cost is $500,000.

WATERWORKS, DAMS, etc., Venezuela

Ministry of Public Works, Caracas, received the low bid for water supply and dams, north of Caracas from Seaboard Construction Co., Mount Kisco, N. Y., U. S. A., on cost plus basis. The estimated cost is $10,000,000-$12,000,000. Parsons, Brinckerhoff, Hogan & Macdonald, New York, N. Y., are the engineers.

HOUSING, Warner Robins, Ga.

Public Housing Authority, Atlanta, Ga., awarded a contract for 600 family dwellings, Ga., to M. B. Kahn Construction Co., Columbia, S. C. The cost will be $1,355,400. Dennis & Dennis, Atlanta, Ga., are the architects.

AIRPORT, Dubuque, Ia.

McVaugh-Haynes Co., Peoria, Ill., is the lowest bidder for constructing airport with an offer of $1,581,806. Civil Aeronautics Authority, Kansas City, Mo., opened bids. Ben F. King, Kansas City, made the surveys and design.

MINE ASSEMBLY FACILITIES, Hawthorne, Nev.

Bureau of Yards & Docks, Navy Department, Washington, D. C., awarded a contract for constructing a mine assembly building, at Naval Ammunition Depot, to William P. Neil Co., Ltd., Hawthorne, at $893,867.

ELECTRICAL and OPTICAL SHOP, San Pedro, Calif.

Guy F. Atkinson Co., San Francisco, Calif., has been awarded a contract for constructing an electrical and optical shop by Bureau of Yards & Docks, Navy Department, Washington, D. C., at $628,000.

FERTILIZER and CHEMICAL PLANT, Houston, Tex.

Southern Acid and Sulphur Co., Houston, awarded a contract for the construction of a superphosphate fertilizer and chemical plant to United Engineers & Constructors, Philadelphia, Pa., at an estimated cost of $3,500,000. Dorr Co., New York, N. Y., is the engineer and architect.

EXPANDING CHEMICAL PLANT, Freeport, Texas

The Dow Chemical Co., Freeport, will construct plant expansion by separate contracts. The estimated cost is $1,500,000.

PLANT, Miami, Okla.

B. F. Goodrich Co., Akron, Ohio, awarded a contract for the construction of a tire plant to George A. Fuller Co., Washington, D. C. The estimated cost is $6,000,000. Austin Co., Cleveland, O., designed the plant. This is a correction of item in Feb. 3 *Engineering News-Record.*

HOUSING, San Francisco, Calif.

Housing Authority of San Francisco City and County, received the lowest bid for constructing 528 family dwellings on Army and Vermont Sts. from MacDonald & Kahn, Inc., San Francisco, Calif., at $1,020,000. E. Geoffrey Bangs and Ernest E. Weihe, San Francisco, are the architects.

BARRACKS FOR COAST GUARD, Washington, D. C.

Public Buildings Administration, Washington, D. C., received the lowest bid for barracks for Spars for U. S. Coast Guard from Jeffress-Dyer Inc., Washington, D. C., at $736,191.

Note—Additional bidding and contract news on many projects large and small appear in the Construction News section beginning on page 14.

National housing

(Continued from page 10)

in reducing the number of items that must be kept in stock. Precutting and site fabrication, standardization of floor plans and careful scheduling of operations are all means of cutting down costs, he said.

There was much discussion on government subsidy of low-cost housing but the consensus seemed to be that some degree of subsidy is needed if the low-income group is to be decently housed. Real estate representatives were bitter in their criticism of federal aid housing and all public housing programs. City officials are much concerned about servicing housing developments unless they are properly planned to fit into workable municipal operations.

Summing it all up, this *News-Record* reporter could find only one thing about which there was common agreement—everyone seemed to be in favor of housing.—*H.W.R.*

• • •

Lumber use controls announced by WPB

In view of dwindling stockpiles, the War Production Board has announced for the first time a plan for overall control of consumption of lumber. The plan in general consists of varying procedures for use by each of ten major consuming groups. These include: Army, Navy, Maritime Commission, civilian construction, and building repair.

Before the plan can go into effect WPB will issue an order setting forth the necessary regulations. The first step will be to gather information on needs by sending out questionnaires to users. However, this will not be necessary in the case of construction contractors since the dollar value of consumption of lumber for construction is already available, WPB says, and can be readily converted into lumber footage needs.

Though details of the plan cannot be worked out until the information on requirements is obtained, it is expected that authorization to purchase lumber will be required, and that in making application, purchasers will be asked to specify species and amounts needed. To what extent this detail will apply to constructions is not yet known. It is probable, however, that in the case of construction, authorization to purchase will be given at the same time that authorization is given to begin work. The plan in general calls for filing quarterly summaries of requirements. It does not affect those using less than 50,000 bd. ft. per quarter.

OBITUARY

Stanley P. Jewett, 89, retired civil ngineer and railroad executive, died Alhambra, Calif., March 7. For more an half a century Mr. Jewett played prominent part in railroad building, st in the East and then in California. entered railroad construction as sistant engineer of the Cincinnati rthern Railway. In 1886 he became e of the owners of the Los Angeles eet car system and was chief engineer d a builder for the Los Angeles Cable ilway System. He was made president the Los Angeles & Owens Valley Rail- d, now a branch of the Southern Pa- ic, in 1905.

J. M. Gard, 52, former project engi- for the Kentucky State Highway mmission, died at Tremont City, io, Feb. 29. He was formerly city gineer at Ravenna, Ky., and also at ive Hill, Ky.

George Forrest Maitland, 67, a bridge ilder since 1916, died at Kansas City, ., March 4. For 12 years Mr. Mait- d was the vice president and treas- r of the Kansas City Bridge Co. He ame associated with the company in 6. He retired two years ago.

Herman Henrik Beels, 85, died Mar. n Kansas City, Mo. Born in Am- rdam, Holland. He came to the ited States in 1879 to help plan the rt Arthur, Tex., canal, and later the n of Port Arthur. In 1905 he went Kansas City, where he engaged in l engineering and construction work.

Percy H. Smith, a retired civil engi- r, died at River Hebert, N. S., on . 19. He was assistant engineer of Nova Scotia public works depart- t at Halifax from 1920 to 1942.

Columbus P. Murphy, 90, pioneer xas contractor, died at Houston Feb.

Wright B. Southgate, 77, prominent he civil engineering field in Nash- e, Tenn., for nearly 60 years, died e Feb. 28.

Edward B. Donohue, 48, former en- er for the Montana State Highway artment and State Water Conserva- Board, died last month. For the 18 months he had been manager a construction company on a gov- ment project in Nassau, Bahamas.

Clifford B. Moore, 64, a retired civil ineer of New York, died at Pitts- , Mass., March 12. For 25 years, until his retirement in 1941, Mr. Moore was chief engineer of the Borough of Queens.

Franklin H. Robbins, 72, retired designing engineer for New York City's Board of Water Supply, died March 12. Born in Yonkers, Mr. Robbins was graduated from Massachusetts Institute of Technology in 1894. He worked on Boston and Pittsburgh waterworks projects until 1907, when he joined the Water Supply Board.

Charles E. Greene, 56, an engineer with Cleverdon, Varney & Pike, Boston structural consultants, died at Winchester, Mass., on March 8.

Harold Robert Wake, 53, civil engineer, died at Charlotte, N. C., March 2. He was secretary of the Aluminum Co. of Canada, Ltd., and had played a leading role in water power development for the Aluminum Co. of America at Badin, N. C., and other areas in the United States.

Conrad G. Fredin, 58, engineer with the St. Louis County, Minn., surveyor's office, and residing at Duluth died recently. In 1907 he entered general contracting business with his father, John F. Fredin, of Duluth. Lately for 8 years he was a road contractor at Minneapolis.

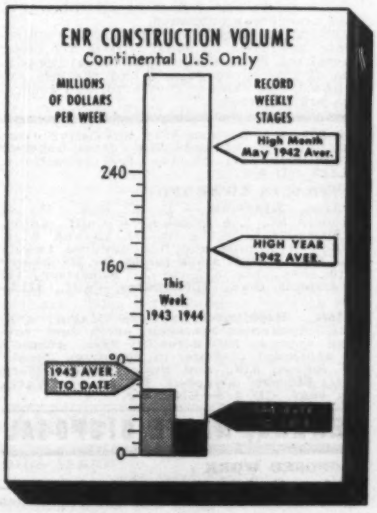
William W. Amburn, 79, railroad construction engineer, died Feb. 27 at Portland, Ore. He participated in construction of the Bull Run pipeline for the Portland water supply.

CONTRACTS AND CAPITAL

CIVIL ENGINEERING construction volume in continental U. S. totals $29,415,000 for the week. This volume, not including the construction by military engineers abroad, American contracts outside the country, and shipbuilding, is 34 percent lower than in the preceding week, and is 47 percent below the volume for the corresponding 1943 week.

Private construction is 70 percent below last week, and 3 percent under last year. Public work is down 17 and 51 percent, respectively, compared with a week ago and a year ago.

The current week's volume brings 1944 construction to $387,801,000 for the eleven weeks of the year, a decrease of 49 percent from the $764,911,000 reported for the period in 1943. Private construction, $84,854,000, is 28 percent above last year, but public construction, $302,947,000, is 57 percent lower as a result of the 59 percent decline in federal work.



In the classified construction groups, gains over last week are in waterworks, sewerage, bridges, industrial buildings, streets and roads, and unclassified construction. Increases over the 1943 week are in waterworks, sewerage, and industrial buildings.

New capital for construction purposes for the week totals $1,328,000, an increase of 140 percent over the corresponding week last year. The week's new financing is made up of $1,128,000 in state and municipal bond sales, and $200,000 in RFC loans for public improvements. New construction financing for 1944 to date, $175,189,000, is 196 percent higher than for the opening eleven weeks of 1943.

CONTRACTS
Continental U. S. Only
(Thousand of Dollars)

	Week Ending Mar. 18 1943	Mar. 9 1944	Mar. 16 1944
Federal	$49,276	$28,652	$22,237
State & Municipal	1,914	1,592	2,874
Total public	$51,190	$30,244	$25,111
Total private	4,444	14,335	4,304
TOTAL	$55,634	$44,579	$29,415
Cumulative 1944.....(11 weeks)			$387,801
1943.....(11 weeks)			$764,911

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	1943 11 weeks	Cumulative 1944 11 weeks
NON-FEDERAL	$59,314	$84,357
Corp. Securities	....	51,176
State & Mun.	54,726	27,406
RFC Loans	1,500	5,775
FPHA Loans	3,088	....
FEDERAL	....	$90,832
TOTAL CAPITAL	$59,314	$175,189

ENR INDEX NUMBERS

Index base=100		1913	1926
Construction Cost	Mar. '44	295.34	141.97
Building Cost	Mar. '44	232.32	125.59
Volume	Feb. '44	86.	38.

CONSTRUCTION REPORTS

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, Manager *SCOTT McLEOD, Statistician*
(Daily service also available—Write for details)

WATER SUPPLY

PROPOSED WORK

Ia., Ottumwa—F. Gibbons, city clk., City Hall, 7 m.g. concrete water storage tank. $125,000.

†Md., Bainbridge—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N. W., Wash., 25, D. C., water supply facilities at Naval Training Station, NOY 9123. M. Pirnie, 25, W. 43 St., New York, 18, N. Y., engr.

N. D., Dickinson—W. Johnson, mayor, City Hall, voted $30,000 bonds, water sys. imprvs., incl. wells, changes in mains, new mains, imprv. pump. sys.

S. D., Parkston—City, L. M. Schlimgen, aud., City Hall, water supply and sewage treatment imprvs. $30,000. J. Staven, Rapid City, engr.

BIDS ASKED

Bids Asked March 23

N. S., Halifax—Secy. Dpt. Munitions & Supply, Ottawa, Ont., water sys. for R.C.A.F. Station, near here, for Dpt. Natl. Defense (Air), Ottawa, Ont. About $35,000.

Bids Asked March 25

Conn., Bristol—City Bd. Water Comrs., City Hall, 1 mi. 16 in. c.i. watermain, Old Marsh Pond to Reservoir 1. $35,000. Extended date. Plans deposit $10, Metcalf & Eddy, 1300 Statler Bldg., Boston, Mass., engrs. CD 3/3.

Bids Asked March 27

†Fla., Tampa—2 m.g. concrete reservoir, electric powered pump. station and intake, mechanical mixing equip. and carbon feeder, chlorinator room and equip., boiler imprvs., electrical work, Fla. 8-292(NF), **FWA.** Plans deposit $25, to be returned to actual bidders, $10 returned to non-bidders. Robert & Co., Inc., Bona Allen Bldg., Atlanta, Ga., engrs. CD 6/22—ENR 6/24.

Bids Asked March 31

†Md., Hyattsville — Washington Suburban Sanitary Comn., Hamilton St., 3,860 ft. 20 in. and 1,930 ft. 24 in. c.i. watermains, Contr. 8, Md. 18-175. **FWA.** Plans deposit $5; adv. ENR 3/16.

Bids Asked In April

N. H., Glencliff—State, Comptroller's Office, State House, Concord, making plans addnl. water sys. facilities, State Sanatorium, $60,000. Metcalf & Eddy, 1300 Statler Bldg., Boston, Mass., engrs.

Bids Asked About April 6

O., Canton—Comrs. Stark Co., Canton, laying watermains in Reedurban Dist., 5 mi. west of here. $63,000. L. Zerbe, Canton, engr. CD 12/1—ENR 12/9.

LOW BIDDERS

Colo., Denver—Bd. Water Comrs., City and County Bldg., concrete lining 2,000 lin. ft. South Boulder Diversion Canal, from M. R. Latimer, W. 7 and Navajo Sts. **$25,000.**

D. C., Wash.—District Comrs., District Bldg., Mar. 9, deep well and pump, etc., at District Training School, near Laurel, Md., from C. W. Lauman & Co., 50 Church St., New York, N. Y. **$15,705.** CD 2/23—ENR 3/2.

†Mich., Adrian — Water Dpt., Florence Westerman, secy., Feb. 26, piling supports for water filtration plant, from Western Foundation Co., 308 W. Washington St., Chicago, Ill., **$30,490. FWA.** CD 2/23.

Tex., Baytown—General Tire & Rubber Co., Baytown, 2½ m.g. earthen reservoir, from Tellepsen Constr. Co., 2900 Clay St., Houston, approx. **$92,000.** CD 2/16—ENR 2/24.

†Va., Norfolk—W. H. Taylor 3rd, Municipal Dir. P. Wks., City Hall, Mar. 4, addnl. water distr. lines to serve Dam Neck Naval Anti-Aircraft Training Station, Camp Pendleton and Camp Bradford, involving installing approx. 3,700 ft. 16 in. c.i. pipe, 53,600 ft. 12 and 8 in. pipe with necessary valves, fittings, to be laid from Laskin Rd. pump. sta. to Camp Pendleton and Dam Neck Naval Anti-Aircraft Training Sta. along Denny's Rd., etc., Va. 44-347, from A. G. Pinkston & Co., Old Kirn Bldg., Portsmouth, **$174,495. FWA.** CD 1/26—ENR 10/28.

Wash., Seattle—City, County-City Bldg., Zone 4, Mar. 2, rebuilding 24 and 36 in. steel drain line from Beacon Hill reservoir to 9 Ave. and Airport Way to existing overflow line, via Columbia Way, from Superior Constr. Co., 3281 36 Ave. S.W., Seattle 6. **$96,317.** CD 2/23.

CONTRACTS AWARDED

†Ariz., Kingman — U. S. Eng., 751 S. Figueroa St., Los Angeles, 14, Calif., addnl. facilities incl. 16,112 lin. ft. 12 and 8 in. welded steel pipe and five hundred twenty 100,000 gal. wood stave tanks, for Hackberry water sys., No. 417, to A. Robertson, 811 Paramount Blvd., Clearwater, Calif., **$122,500.**

Miss., Meridian—City, c/o Mayor, City Hall, impounding reservoir, earth dam, covering approx. 200 acres in area, about 5 mi. southeast of here, to Shuptrine Constr. Co. Selma, Ala., and Pigford Bros., Meridian. **$40,000.** Awarded 3/3. J. C. Watts, city engr. CD 3/3—ENR 3/9.

Location of ENR Correspondents

Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over.
ENR Engineering News-Record
CD Engineering News-Record Construction Daily
A-E-M Architect-Engineer-Management type of contract

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger; water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Named in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Unclassified
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads); BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR);
LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Note: To comply with censorship requirements, addresses on some reports are being generalized. Data which would reveal the purpose of the improvements and the size are withheld. The name of contractor and general area are reported.

SEWERS, WASTE DISPOSAL

PROPOSED WORK

Colo., Garden Home (near Denver)—Garden Home Sanitation Dist., Garden Home, 24 mi. sanitary sewer line, $350,000. Applying for FWA funds. D. H. M. Strong, 7,000 W. 29 Ave., Denver, engr.

★**Conn., Bristol**—Dpt. P. Wks., City Hall, sewage disposal plant and treatment facilities $250,000, sewers $500,000, pipeline Metcalf & Eddy, 1300 Statler Bldg., Boston, Mass., engrs.

BIDS ASKED

Bids Asked March 23

N. Y., New York—President Bronx Borough, Bronx County Bldg., 851 Grand Concourse, Zone 51, sewer, appurtenances, Palisade Ave., Paulding Aves., Kappock, E. 213 and E. 214 Sts.

LOW BIDDERS

Calif., Los Angeles — Bd. Supervs. Los Angeles Co., Hall of Records, Mar. 7, sanitary sewer in Santa Ana Blvd., etc. Co. No. 1067, near Lynwood, from Artukovich Bros., 7320 Atlantic Blvd., Hynes, engr. A. Jones, engr.

†Colo., Lakewood — Lakewood Sanitation Dist. Mar. 3, 146,000 lin. ft. sanitary sewer lines, from Thos. Bate & Sons Co., 2311 [illegible] St., Denver, Schedule 1, **$375,667.** Est. $370,000. **FWA.** CD 2/15—ENR 2/17.

La., New Orleans—Sew. & Water Bd., 1300 Carondelet St., Mar. 2, Contr. 148-S, furnishing, laying approx. 7,200 lin. ft., 8- to 24-in. concrete sewers and 2,600 lin. ft. 6-in. concrete sewer house connections, from Julius A. Wolfe Constr. Co., Carondelet Bldg., **$62,673;** Contr. 146-S, furnishing, laying approx. 19,400 lin. ft. 8- to 12-in. concrete sewers and 7,000 lin. ft. 6-in. concrete sewer house connections, from Boh Bros. Constr. Co., 2400 Cypress St., **$85,022.** CD 2/24.

†S. C., Myrtle Beach—U. S. Eng. Office, sewage disposal Sys.; Army Air Base No. 38-081-44-134, from Blythe Bros. Co., Inc., 424 S. Brevard St., Charlotte, N. C. over **$50,000.** CD 2/29.

CONTRACTS AWARDED

Mich., Detroit—Dpt. P. Wks., City Hall, auxiliary pump. station and connecting sewers vicinity of Mack Ave. and Cadieux Rd., to Gargaro Co., Inc., 40-7 Mile Road E., Zone 3, **$83,977.** Bids 3/2. CD 2/25.

†Mo., St. Louis County—Hanley-Page Bond Sewer Dist. of St. Louis Co., c/o Board of Trustees, A. Cole, secy., 6815 Robbins Ave., St. Louis, Zone 14, 6- to 24-in. sanitary sewers, etc., to Victory Constr. Co., 2[illegible] Brentwood Blvd., Brentwood, St. Louis, Zone 17. **$48,250. Est.** $60,000. **FWA.** Bids 1/6. CD 2/23.

BRIDGES

PROPOSED WORK

W. Va., Wheeling—2 bridges at Bak[illegible] and Fulton Sts. $117,000. Harrington, Cortelyou, Dwight Bldg., Kansas City, Mo., engrs.

BIDS ASKED

Bids Asked March 21

Iowa—State Hy Comn., Ames, bridge and culvert repairing on Iowa 17, at Raccoon River, Sects. 19 and 20, Grant Twp., M-127; Greene Co.; on Iowa 100, 4.5 mi. west of Griswold, M-4277, Pottawattamie Co.; 7 mi. Iowa 148, north of Gravity, M-4276, Taylor Co. F. R. White, Ames, ch. engr.

Bids Asked March 24

Wisconsin—State Hy. Comn., E. L. Roettiger, engr., Madison clearing, repairing Chippewa River Bridge 2, S. T. Hy. 8, M.P. No. M-96, Buffalo and Pepin Counties; McClary Bridge, C.T.H. M.P. No. 87, Marathon Co.; Trenton Bridge, U. S. Hy. 43, M.P. No. M-60, Pierce Co., Turtle Creek Bridge, S. T. Hy. 15, M.P. No. 88, Rock Co.; Bridge Axe Bridge, S. T. Hy. 35, M.P. No. M-[illegible] Vernon Co.; Nekoosa Bridge, S. T. Hy. [illegible] M.P. No. M-46, Wood Co.

Bids Asked March 28

Mass., Chicopee—P. Wks. Dpt., City Hall, concrete bridge, Grape St. $25,000. Tighe & Bond, 189 High St., Holyoke, engrs. CD 1[illegible] —ENR 2/17.

Que., St. Joseph d'Alma—Minister P. Wks., Quebec City, converting railway bridge to highway bridge, for Province of Quebec, Quebec City. $30,000. O. Desjardins, Dpt. P. Wks., Quebec City, engr.

LOW BIDDERS

Nevada — State Dpt. Hys., Carson City, Mar. 10, imprv. 0.427 mi. concrete, etc. bridge, Clark Co., from Vegas Rock & San[illegible]

DGES (Low Bidders, Cont'd.)
10 and E. Fremont Sts., Las Vegas, CD 3/3.

STREETS AND ROADS

S ASKED

Bids Asked March 31

...Hartford—City, Bd. Contr. & Sup- 550 Main St., furnishing, laying 56,200 yds. sheet asphalt, patching and repair- where needed. Over $25,000.

...wa—State Hy. Comn., Ames, mainte- ce resurfacing 5.1 mi. Iowa 297, from of paving to Gilbertsville, M 6195, k Hawk Co., 14.1 mi. Iowa 101, from ton to Iowa 150, 0.7 mi. Iowa 363 from ana to Iowa 101, M 6196, Benton Co.; kpiles on Iowa 163, Monroe Yard, U. S. Colfax Yard, at Junction U. S. 6 and 14 and near Kellogg, M 1274, Jasper 8.9 mi. Iowa 74, from Cedar Rapids Palo, M 6197, Linn Co.; 7 mi. Iowa 96, Tama Co. to Iowa 14, 5.6 mi. Iowa from Albion to Iowa 14, 5.3 mi. Iowa from Liscomb to Iowa 14, 6.8 mi. Iowa from Jasper Co. to pavement, 7.6 mi. 146 from Tama Co. to U. S. 30, 7 mi. 224 from State Center to Iowa 64, 1.2 Iowa 235 from Rhodes to Iowa 234, kpiles on U. S. 30, 3 mi. east of Mar- ltown, stockpiles on Iowa 14, 3 mi. h of Marshalltown and at junction of 223 and Iowa 14, M 1277, Marshall Co.; mi. Iowa 141, from Grange to Camp ge, 6.8 mi. Iowa 316 from Runnells to 63, 0.7 mi. Iowa 338 from Bondurant wa 64, stockpiles on U. S. 6, at Altoona d on U. S. 69, 1 mi. north of Ankeny, 141, 1 mi. north of Des Moines north limits, Iowa 28 at junction of U. S. 69, 1278, Polk Co.; 5.4 mi. Iowa 115, from and to Story City, 4.1 mi. 317 from Mc- sburg to U. S. 65, 15 mi. Iowa 210 from er to Maxwell, 1 mi. Iowa 211 from nbridge to Iowa 210, stockpiles on U. S. 3 mi. north of Ames, on U. S. 30, 1 mi. of Ames, on U. S. 65, 4 mi. west of and at junction with Iowa 64, M 1279, y Co.; 1 mi. Iowa 349, from Ahquabi e Park to U. S. 69, 7.2 mi. Iowa 207 from e Virginia to U. S. 69, 6.2 mi. Iowa 206 n Lacona to U. S. 65, 3.6 mi. Iowa 205 n Mills to U. S. 65, stockpiles on U. S. 4 mi. north of Indianola and 4 mi. h of Indianola, and 4 mi. west of anola, M 1280, Warren Co.; maintenance rfacing and cover aggregate 8 mi. Iowa from Victor to Iowa 212, 7.8 mi. Iowa from Upper South Amana to 0.5 mi. h of Lower South Amana and from t Amana to East Amana, stockpiles on a 220, at junction with Iowa 149, at ction U. S. 6 on U. S. 6, 1.5 mi. west of engo, 2 mi. west of Ladora on Iowa 149, Junction with Iowa 220, M 6185, Iowa 17.6 mi. Iowa 21, from Keokuk Co. . S. 6, 7.6 mi. Iowa 85, from Montezuma Deep River, stockpiles on U. S. 6 and a 21, M-1275, Poweshiek Co.; 4 mi. a 96 from Gladbrook to Marshall Co., mi. Iowa 171 from Elberon to Iowa 21, i. Iowa 229 from Garwin to U. S. 63, mi. Iowa 318 from Clinton to Iowa 21, kpiles on U. S. 30, U. S. 63, Iowa 21, a 8, M 1276, Tama Co.; bituminous ntenance surfacing on streets and high- a, State MS-5. F. R. White, Ames, ch. r.

Bids Asked March 22

. Y., Staten Island—President Richmond o, Boro Hall, Zone 1, concrete founda- repaving Todt Hill Rd. from Ocean to Richmond Rd.

Bids Asked March 23

ebraska—State Dpt. Rd. & Irrigation, G. Scott, engr., Lincoln, sand gravel sur- g 12.8 mi. SN-FA 40 Hebron-Geneva; mi. SN-FA 75, Geneva-Hebron, both yer Co.; 8.8 mi. SN-FA 143-A, Fairmont- ola; 1 mi. SN-FA 159-A, Geneva-Fair- t, both Fillmore Co.; 10 mi. SN-FA B, York-Osceola; 12 mi. SN-FA 143-C, k-Osceola, both York Co.; sand gravel ntenance projects, Herman-Elk City and r-Nickerson, Patrol 21029 and 21030, shington Co.; Oshkosh south, Patrol 2, Garden Co.; Gordon, north and south, rol 51029 and 51030, Sheridan Co.; Craw- -Orella, Patrol 51035; Hemingford-Scotts- f, Patrol 51042, Box Butte Co.; Rushville h, Patrol 51053, Sheridan Co.

Bids Asked March 24

, Sac City—Bd. Supervs. Sac Co., ntenance graveling various roads. Over 000. W. C. Otto, Sac City, co. engr.

N. Y., Newburgh—U. S. Eng., 120 Wall t., New York, 5, paving. $1,000,000.

Bids Asked March 29

alifornia—State Div. Hys., G. T. McCoy, r., Pub. Wks. Bldg., Sacramento, repair- with road mix over existing bituminous facing about 7 mi. road between Mojave Ricardo, Kern Co.; imported borrow un- ded rock base and plant mix surfacing t 12 mi. road between Madera Co. line Merced, Merced Co.; asphaltic concrete ng 1.2 mi. road between 0.3 mi. south of San Leandro and north city limit of San Leandro, Alameda Co.

Bids Asked March 30

California—State Div. Hys., G. T. McCoy, engr., State Bldg., Los Angeles, grading, plant mix surfacing 0.2 mi. Vanowen St. in Burbank between Hollywood Way and Buena Vista St., and Clybourn Ave. in Los Angeles, between Vanowen St. and Victory Blvd., District VII, Los Angeles Co.

Bids Asked

Iowa—State Hy. Comn., Ames, rejected bids Mar. 7, maintenance resurfacing, etc. roads in Tama and Greene Counties. No bids received for roads in Jasper, Poweshiek Counties. F. R. White, Ames, ch. engr. CD 2/28—ENR 3/2.

LOW BIDDERS

†D. C., Wash—District Comrs., District Bldg., Mar. 3, imprv. roadways, vicinity 2 and 4 Sts., Wayne Pl., Upsal St. S.E., D.C. 49-162 and vicinity Lightwood Gardens and Bolling Heights, D.C. 49-164, from Wilmoth Paving Co., 60 P St. S.E., **$61,796. FWA.** CD 2/29.

Idaho—J. D. Wood, acting comr. P. Wks., Boise, imprv. 1.044 mi. Bannock Co., from H. A. Gardner, Blackfoot, **$47,886.** Bids 3/10. C. A. Kelly, Pocatello, engr. CD 3/1.

★**Virginia**—State Dpt. Hys., Richmond, Mar. 2, furnishing, applying bituminous material and applying covering material, Class B, and furnishing, applying bituminous material and furnishing, applying covering material, Class C, both Suffolk Dist., from Short & Thompson Co., Inc., Hopewell, **$129,596** and **$188,135** respectively***furnishing, applying bituminous material and applying covering material, Class B, Salem Dist., from Echols Bros., Staunton, **$29,394***** Lynchburg Dist., from Municipal Paving Corp., Brooklyn, Md., **$86,311*****Staunton Dist., from Nelson H. Clark & Sons, Inc., Luray, **$74,242*****furnishing, applying bituminous material, Class D, Bristol Dist., from Sam Finley, Inc., Roanoke, **$43,180*****Lynchburg Dist., from The Lanadell Co., 95 Zabriskie St., Hackensack, N. J., **$53,337***** Culpeper Dist., from Union Bldg. & Constr. Corp., 631 Main Ave., Passaic, N. J., **$169,350*****Fredericksburg Dist., from The James Gibbons Co., Relay, Md., **$135,445***** furnishing, applying bituminous material and applying of covering material, Class B, and furnishing, applying bituminous material, Class D, from W. M. McIntosh, Inc., North Blvd. and Ellen Rd., Richmond, **$127,665** and **$52,490** respectively. CD 2/23.

CONTRACTS AWARDED

†Calif., Stockton—U. S. Eng., 1209 8 St., Sacramento, Zone 8, roads and hardstandings, Stockton Ordnance Depot, Contr. 04-167-Eng-166, to A. Teichert & Co., Davis Hy., Sacramento, **$42,346.**

Fla., Jacksonville—Imprv., paving sidewalks on Main St., Myrtle Ave., Atlantic Blvd. Phillips Hy. and Hogan Rd., own forces. Approx. **$50,000.** W. E. Shedden, Eng. Bldg., engr.

★**Ohio**—State Hy. Dpt., Columbus, to L. P. Cavett Co., Shepherd Ave., Lockland, in prv. 33.74 mi. Preble Co., **$43,737,** est. $45,397; 49.48 mi. Pickaway, Fayette and Madison Counties, **$49,915,** est. $50,960; 15.22 mi. Warren and Clinton Counties, **$26,734,** est. $26,747; 21.13 mi. Clermont Co. **$49,372,** est. $49,751***to Lester Baker Co., St. Joe, Ind., 16.56 mi. Hardin Co. **$38,069,** est. $38,329; 15.15 mi. Paulding Co. **$36,402,** est. $37,789***to Portage Bituminous Co., Andover, 22.19 mi. Mahoning and Stark Counties, **$34,750,** est. $36,762***to Lytle Oil Co., Pittsburgh and East South Sts., Wooster, 26.88 mi. Holmes Co. **$38,137,** est. $28,236***to Charles J. Shelly, Thornville, 35.2 mi. Perry, Fairfield and Licking Counties, **$58,272,** est. $58,455***to City Asphalt & Paving Co., 120 Pike St., Youngstown, 17.35 mi. Columbiana and Jefferson Counties, **$46,212,** est. $47,434***to Southern Ohio Quarries Co., 150 E. Broad St., Columbus, 33.29 mi. Ross and Pike Counties, **$36,371,** est. $37,175***to H. J. Hart, 419 Elyria Blk., Elyria, 18.74 mi. Medina and Lorain Counties, **$45,521,** est. $43,285*** to Central Ohio Improvement Co., 13 E. Corry St., Cincinnati, 58.92 mi. Clark and Champaign Counties, **$50,362,** est. $52,880 ***to Ohio Road Improvement Co., 50 E. Broad St., Columbus, 9.57 mi. Richland Co., **$31,915,** est. $32,366*** to Bowsman Washed Sand & Gravel Co., P. O. Box 506 Troy, 56.08 mi. Darke and Miami Counties, **$54,974,** est. $56,016***to A. J. Ronyak, Burton, 30.73 mi. Summit and Portage Counties, **$32,082,** est. $32,082. Grand total $672,825. Bids 3/7. Received no bids Mar. 7, work in William, Fulton, Monroe, Noble, Guernsey, Muskingum, Marion and Union Counties. CR 2/23—ENR 3/2.

†Tex., Fort Bliss—U. S. Eng., Albuquerque, N. M., addnl. roads, Contr. 29-005-Eng-187, to A. O. Peabody, Santa Fe, N. M., **$34,320.**

EARTHWORK, WATERWAYS

BIDS ASKED

Bids Asked April 8

†Calif., Redding — Bureau Reclamation, Redding, glass and metal partitions, grilles and panels and heater covers for Shasta power plant, Kennett Div., Central Valley project, on Sacramento River, near here, Spec. 1724-D. S. O. Harper, ch. engr.

Bids Asked April 13

†Washington—Bureau Reclamation, Yakima, earthwork, pipeline, structures, laterals 70.1 to 84.6 and sublaterals, East Turbine lateral, Station 260 plus 00, to end and sublaterals, East Turbine lateral wasteway and diversions channels, mile 51.74 to mile 58.45, Roza Div. Yakima Project, 6 to 16 mi. east of Sunnyside, Spec. 1068; adv. ENR 3/16.

CONTRACTS AWARDED

†Idaho, Idaho Falls—U. S. Eng., 628 Pittock Blk., S.W. 10 Ave. and Washington St., Portland, Ore., emergency flood control work on Snake River, incl. stone revetment at Bannock and Sunnydell Canal, near here, to W. C. Burns, 150 11 St., **$39,127.**

Tex., Baytown—General Tire & Rubber Co., Baytown, dragline dirt work, to Brown & Root, Box 3, Houston, **$15,000.**

†Wash., Bridgeport — U. S. Eng., 800 3 Ave., Seattle, Zone 4, core drilling on site proposed Foster Creek Dam on Columbia River, to Lynch Bros., 3636 Woodland Park Ave., Seattle, Zone 3, **$55,525.**

UNCLASSIFIED

PROPOSED WORK

†Calif., Alameda—AIR STATION FACILITIES—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., architectural and engineering services by Blanchard, Maher & Ward, 369 Pine St., San Francisco, addnl. personnel facilities, Naval Air Station, NOY 9236.

†Calif., Alameda — AVIATION FACILITIES—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., architectural and engineering services by Bangs, Spencer, Ambrose & Simmonson, 605 Market St., San Francisco, addnl. aviation facilities, AAS, NAS, NOY 9237.

†Calif., Alameda—DOCKING FACILITIES—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., architectural and engineering services by W. P. Day, F. G. White & H. E. Squire, 1502 Financial Center Bldg., San Francisco, addnl. docking facilities, Naval Air Station, NOY 9174.

†Calif., Oakland—FACILITIES—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., architectural and engineering services by Ernest J. Kump Co., 251 Kearney St., San Francisco, addnl. facilities, NATS, NAAS, NOY 8805.

★**Calif., San Francisco**—BROADCASTING PLANT—National Broadcasting Co., 420 Taylor St., short wave broadcasting plant. $1,000,000.

†Colo., Pueblo—LOADING and PARKING APRON, etc.—U. S. Eng., 909 17 St., Denver, loading and parking apron and taxiway connections Pueblo Municipal Airport. $65,100.

★**†Del., Dover**—HANGAR, etc.—U. S. Eng., Dover, hangar, warehouses, parachute bldg. and paint shop, $500,000.

†Louisiana—AIRPORT GRADING, etc.—U. S. Eng., 25 St. and Avenue F, Galveston, Tex., cancelled bids to have been opened Mar. 6, addnl. grading, drainage, Alvin Callender Airport at Belle Chasse, Sol. No. 41-243-44-C154.

†La., Camp Polk—FIRE ALARM SYSTEM—U. S. Eng., 25 St. and Avenue F, Galveston, Tex., fire alarm sys. for Army Station zone. Over $25,000.

†N. Y., Floyd Bennett Field (Sta. Brooklyn)—SITE SURVEYS—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., engineer-architect services by Lockwood, Kessler & Bartlett, Inc., 32 Court St., Brooklyn, for survey of site, Naval Air Station, NOY 8945.

★**†Ore., Port Orford**—AIRPORT CLEARING, etc.—Civil Aeronautics Admin., Smith Tower Annex, Seattle, 4, Wash., clearing, grubbing, drainage, paving for airport. $500,000.

★**Pa., Warren**—OIL WELL, etc.—Syndicate, c/o J. P. Ruggles, engr., Bradford, extensive development shallow sand oil properties, incl. drilling large number new wells, installing gathering pipelines, steel tank storage facilities, pumping plant, etc., Warren Co. Over $500,000.

†S. C., Spartanburg—TAXIWAYS—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., engineer-architect services by Harwood Beebe Co., 208 Montgomery Bldg., taxiways, Naval Air Station, NOY 9223.

★**Tennessee** —GAS PIPELINE— Tennessee Natural Gas Lines, 1029 3rd National Bank Bldg., Nashville, natural gas pipeline to points east and west in state. $10,000,000. Brokaw, Dixon & McKee, 120 Bway., New York N. Y., engrs.

Tenn., Columbia—AIRPORT—City, airport.

UNCLASSIFIED (Proposed Work, Cont'd)

†**Tex., Abilene**—BOMBING and GUNNERY RANGE—U. S. Eng., Fort Sam Houston, bombing and gunnery range at airfield. Over $60,000.

★**Washington**—TRACKAGE and TUNNELS—Northern Pacific Ry. Co., B. Blum, ch. engr., 176 E. 5 St., St. Paul, Minn., straightening 6 mi. section track east of Cle Elum, incl. construction of 3 tunnels. $2,000,000.

†**W. Va., Wheeling**—AIRPORT GRADING, etc.—Civil Aeronautics Admin., La Guardia Field, Jackson Heights, N. Y., revised plans nearing completion, airport constr., incl. grading, drainage, paving, etc. CD 11/24—ENR 12/2.

★**N. B., Edmundston**—DAM—Town, exten. dam. $600,000.

BIDS ASKED

Bids Asked April 4

N. Y., New York—PLAZA LIGHTING, etc.—At office Executive Dir. Port New York Authority, F. C. Ferguson, chn., 111 8 Ave., New York plaza lighting, miscellaneous construction, North Tube, Lincoln Tunnel, Contr. MHT-66. Plans deposit $25; adv. ENR 3/16.

Bids Asked About April 20

★†**Md., Cumberland** — AIRPORT — Civil Aeronautics Admin., La Guardia Field, Jackson Heights, N. Y., airport construction, incl. 1,600,000 cu. yd. grading, 16,000 lin. ft. drainage, paving, etc. $800,000. CD 2/7—ENR 2/10.

LOW BIDDERS

†**Ariz., Dateland**—TAXIWAY, etc.—U. S. Eng., 751 S. Figueroa St., Los Angeles, 14, Calif., Mar. 2, taxiway and runway exten. and concrete pavement, Army Air Field, No. 457, from P.D.O.C., Luhrs Bldg., Phoenix, $396,679.

†**Ariz., Yucca** — TAXIWAY, etc. — U. S. Eng., 751 S. Figueroa St., Los Angeles, 14, Calif., Mar. 7, taxiway and runway exten., concrete paving, Army Airfield, No. 458, from Tiffany Constr. Co., Box 846, Phoenix. $289,209.

★†**Ia., Dubuque** — AIRPORT — Civil Aeronautics Admin., 410 E. 12 St., Kansas City, Mo., Mar. 6, airport, from McVaugh-Haynes Co., Peoria, Ill., $1,581,806. CD 2/29—ENR 2/3.

†**La., Merryville** — BOMBING RANGE — U. S. Eng., 25 St. and Avenue F, Galveston, Tex., Feb. 28, demolition target bombing range, from R. M. Lilly, 1255 Ingleside Dr., Baton Rouge, 1st alt. $15,405, 2nd alt. $44,293.

★†**Nev., Indian Springs (Las Vegas)**—LANDING FIELD FACILITIES—U. S. Eng., 751 Figueroa St., Los Angeles, 14, Calif., Mar. 3, addnl. landing facilities, roads at Army Airfield No. 405, from A. D. Drum, Jr., Fallon, $632,599.

†**Tex., Abilene**—TARGET BUTT—U. S. Eng., Fort Sam Houston, earthen target butt, at Army Airfield, from Holland Page, Georgetown Rd., Austin, $29,591. CD 3/1—ENR 3/9.

†**Tex., Randolph Field**—RUNWAY, etc.—U. S. Eng., Fort Sam Houston, Mar. 7, east runway and taxiway, Spec. 1063, from H. B. Zachry Co., P. O. Box 596, San Antonio, $354,996. CD 2/29.

Wyoming — RURAL ELECTRIFICATION LINES—Shoshone River Power Co., Cody, rural electrification line, Park Co., from Northwestern Eng. Co., Rapid City, S. D., $71,000.

CONTRACTS AWARDED

†**Ala., Brookley Field**—AIR FIELD BLDG.—U. S. Eng., Grant St. west of Westwood St., Mobile, vehicle repair shop, Inv. O1-076-44-342, to Foster & Greighton Co., American National Life Bldg., Nashville, Tenn., $74,000. Bids 2/28.

†**Ariz., Yuma**—HANGAR DOOR END WALLS—U. S. Eng., 751 S. Figueroa St., Los Angeles, 14, Calif., end walls for hangar doors at Advanced Flying School, to R. J. Daum, 6803 West Blvd., Inglewood, Calif. $29,776.

†**Calif., Alameda**—AIR STATION SITE PREPARATION—U. S. Eng., 74 New Montgomery St., San Francisco, Zone 19, site preparation at Alameda Air Station Intransit Depot, Spec. 1386-1, to Macco Constr. Co., Freight and Ferry Sts., Oakland, $168,500.

†**Calif., Moffett Field**—AIR FIELD BLDG.—National Advisory Com. for Aeronautics, Ames Aeronautical Laboratory, equipment bldg., at Ames Aeronautical Laboratory, to Carl N. Swenson Co., 355 Stockton Ave., San Jose, $96,324.

★†**Calif., Maywood**—AIRFIELD BLDGS.—U. S. Eng., 751 S. Figueroa St., Los Angeles, Zone 14, bldgs., Air Force Depot, No. 455, to Zoss Constr. Co., 137 North Cole Ave., Los Angeles, $1,268,299. CD 1/12—ENR 1/20.

†**Florida**—GUNNERY TRAINING FACILITIES—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., gunnery training facilities at Outlying Fields, Vero Beach and Daytona Beach, NOY 8841, to Ivy H. Smith Co., 1525 San Marco Blvd. S., Jacksonville, $296,000.

†**Fla., Fort Myers**—AIRFIELD WALKS, etc.—U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, shell walks, drainage and grassing at Buckingham Army Airfield, Inv. Neg-Jax-44-441, to M. L. Blank, Delray Beach, $27,381. Awarded 2/28.

†**Fla., Kissimmee**—AIRFIELD BLDGS.—U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, temporary frame bldgs., Army Air Field, Contr. 08-123-Eng-280, to W. D. Berry, Inc., St. Petersburg, $38,415.

†**Fla., Pensacola**—SOIL STABILIZATION—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., soil stabilization, Naval Air Training Center, Whiting Field, NOY 8712, to Florida Nursery & Landscaping Co., Leesburg, $114,178. CD 1/20.

†**Fla., Valparaiso** — PARKING APRON — U. S. Eng., Grant St. west of Westwood St., Mobile, Ala., parking apron for warm-up pads, Ser. No. 325, at Florasa, near here, to Noonan Constr. Co., Pensacola, $135,541.

†**Fla., Valparaiso**—RUNWAY, etc.—U. S. Eng., Grant St. west of Westwood St., Mobile, Ala., runway, taxistrip, paving existing post roads and application seal coat on existing runway, Ser. No. 327, to Smith Eng. & Constr. Co., West Pensacola, $276,322.

†**Fla., Vero Beach** — AIR STATION BLDGS., etc.—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., addn. to bachelor officers' quarters, relocation and addn. to hangars, etc., Naval Air Station, NOY 8838, to Chalker & Lund, 3900 Georgia Ave., West Palm Beach, $112,314. CD 2/16.

†**Ga., Hunter Field (br. Savannah)**—AIRFIELD PAVING—U. S. Eng., Post Office Bldg., Savannah, grading, paving addnl. parking apron, Contr. 09-133-Eng-140, to Ballenger Paving Co., Greenville, S. C., $177,201.

La., Creole — OIL WELL — Magnolia Petroleum Co., Magnolia Bldg., and J. S. Abercrombie Co., Gulf States Bldg., both Dallas, Tex., developing 9,000 ft. test oil well to Noble Drilling Co., Ardmore, Okla. Over $25,000.

La., Gueydan—OIL WELL—Pure Oil Co., Esperson Bldg., Houston, Tex., developing 8,000 ft. test oil well, to Loffland Bros., Oil & Gas Bldg., Houston, Tex., approx. $35,000.

La., Houma—OIL WELLS—Barnsdall Oil Co., Esperson Bldg., Houston, Tex., developing two oil well tests, to Cron & Gracey Drilling Corp., Commerce Bldg., Houston, Tex., approx. $70,000.

La., Lutcher—OIL WELL—E. R. Frankel, et al, Commerce Bldg., Houston, Tex., developing 10,500 ft. test oil well, to Regan Drilling Co., Lafayette, approx. $40,000.

La., Mamou—OIL WELL—Gulf Refining Co., Gulf Bldg., Houston, Tex., developing new 8,000 ft. test oil well, to O. W Dyer, 2nd National Bank Bldg., Houston, Tex., over $25,000. CD 2/28—ENR 3/2.

†**Md., Baltimore**—PIER—Bethlehem Fairfield Shipyard, 1201 Key Highway, timber pier and head house, Fairfield Sect. to Arundel Corp., Pier 2, Pratt St. Federally financed. CD 2/9—ENR 2/17.

†**Nev., Hawthorne**—LOADING PLANTS—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., converting plants for loading of amatol, N.A.D., NOY 8461, to William P. Neil Co., Ltd., 8414 Loma Vista Ave., Los Angeles, Calif., $101,869.

★†**Nev., Hawthorne**—MINE ASSEMBLY FACILITIES—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., mine assembly facilities, NAD, NOY 8482, to William P. Neil Co., Ltd., Box EE, $893,867. CD 3/7.

†**N. J., Atlantic City**—AIR STATION BLDGS.—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., 3 BIB barracks, Naval Air Station, NOY 9050, to G. H. Evans, 1124 Fairmount Ave., Phila., Pa., $135,828.

†**N. Y., Brooklyn**—PIER IMPROVEMENTS—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., imprv. Pier 26, Navy Yard, NOY 8203, to Planet Contracting Co., 11 W. 42 St., New York, Zone 18.

†**N. Y., New York**—AIR STATION BLDGS.—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., Bachelor Officers' Quarters addn., Naval Air Station, NOY 8266, to John T. Brady & Co., Inc., 606 W. 47 St., New York, $107,840.

†**O., Cleveland**—TAXI STRIP, etc.—U. S. Eng., 700 Union Guardian Bldg., Detroit, Mich., concrete taxi strip, target butt and fencing, at Cleveland Aircraft Assembly Plant, Village Brook Park, to Lombardo Bros. Constr. Co., 1770 E. Eleventh St., Zone 14, $54,791.

†**Okla., Oklahoma City**—ADDITIONAL FACILITIES—U. S. Eng., 4[illegible] Wright Bldg., Tulsa, Zone 2, addnl. facilities, Contr. 34-Eng-140, Tinker Army Airfield, to Melton Layton Constr. Co., Oklahoma City, $136,353. CD 1/4—ENR 1[illegible]

Okla., Tonkawa—OIL WELL—Deep Rock Oil Corp., 814 S. Harvey St., Oklahoma City, developing 7,000 ft. test oil well, 4 mi. south of here, to Summit Drilling Co., Fort City, over $25,000.

†**Ore., Klamath Falls**—AIR STATION MAGAZINE FACILITIES—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., magazine facilities, Naval Auxiliary Air Station, NOY 8664, to Morrison Knudsen Co., Inc., and Ford, Twaits Co., P. O. Box 329, $27,000.

†**Pa., Harrisburg**—PIPE LINE—MAIN—Emergency Pipe Lines, Inc., Beaumont, Tex., replacing 11 mi. 20 in. seamless steel pipe main, near here, to Ray L. Smith Constr. Co., State St. Bldg., approx. $150,000.

†**Pa., New Cumberland** — ADDITIONS — U. S. Eng., Standard Oil Bldg., Baltimore, Md., addns. New Cumberland ASF Depot, Contr. No. 18-020-Eng-302, to James H. Marshall, The Marshall Co., Dover, O., $33,205.

Texas—OIL WELL, etc.—Texas Co., San Jacinto St., Houston, developing 4,500 ft. test oil well, earthen storage pits, etc., between Randado and Guerro, to M. L. Mansingill, 342 W. Woodlawn St., San Antonio, over $25,000. CD 3/9, under Randado.

Tex., Alice—OIL WELL—Highland Oil Co., Oil & Gas Bldg., Houston, developing 5,000 ft. test oil well, 2½ mi. southwest of here, to Golding-Farris Drilling Co., Natl. Bank Bldg., Houston, over $25,000. CD 10/1—ENR 10/14.

Tex., Blessing—OIL WELL, etc.—Ohio Oil Co., Oil & Gas Bldg., Houston, developing 9,500 ft. test oil well, storage facilities, 4 mi. northeast of here, to Two States Drilling Co., 2310 Bluebonnet Blvd., Houston. CD 1/4—ENR 3/9.

Tex., Goliad—OIL WELL—G. E. Green et al, Goliad, developing 4,500 ft. test oil well, 3½ mi. east of here, to E & H Drilling Co., Alamo National Bldg., San Antonio, approx. $25,000. CD 12/9—ENR 12/16.

Tex., Guerra—OIL WELL—Texas Oil, 720 San Jacinto St., Houston, developing 5,000 ft. test oil well, to M. L. Mansingill, 342 W. Woodlawn Ave., San Antonio, approx. $25,000. CD 1/24—ENR 2/3.

†**Tex., Houston**—FLOATING DRY DOCK—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., [illegible] tion timber floating dry dock, NOY 9[illegible], Brown Shipbuilding Co., Industrial Bl[illegible], $150,000, cost-plus-fixed fee. CD 7/27.

Tex., Randado—OIL WELL—Sun Oil Co., Esperson Bldg., Houston, developing 4,[illegible] ft. test oil well, to Newman Bros. Drilling Co., Milam Bldg., San Antonio, over $25,000. CD 2/25—ENR 3/2.

†**Tex., San Angelo**—GRASSING, etc.—U. S. Eng., Fort Sam Houston, grassing at Lackland Field, Auxiliary Field 4, for Goodfellow Field, Spec. 1070, to P. Maddox, San Angelo, $34,429.

Tex., Shepherd—OIL WELL, etc.—Navarro Oil Co., San Jacinto National Bank Bldg., Houston, developing deep test oil well, earthen pits, etc., to Brewster-Bartle Drilling Co., Commerce Bldg., Houston, over $25,000. CD 9/22—ENR 9/30.

★**Alta., Namao**—AIRPORT—U. S. Eng., 10041 102 St., Edmonton, airport construction, incl. clearing, grading, drainage, hard surfaced runway and taxi strip, hangar, etc., to Dufferin Paving & Crushed Stone, Ltd., 2700 Dufferin St., Toronto, Ont., $500,000.

LATIN AMERICA

Venezuela—Ministry of Public Works, Caracas, Mar. 1, waterworks, dams, etc., from Seaboard Constr. Co.-Utah Constr. Co., New Bedford Rd., Mt. Kisco, N. Y., $10,000,000-$12,000,000, cost-plus-basis, Parsons, Brinckerhoff, Hogan & Macdonald, 30 Maiden Lane, New York, N. Y., engrs. CD 11/19—ENR 11/25.

PUBLIC BUILDINGS

PROPOSED WORK

†**Ala., Mobile**—Pub. Housing Auth., NHA, Georgia Savings Bank Bldg., Peachtree and Broad Sts., Atlanta, Ga., rejected bids Feb. 28, 200 family housing trailers, Ala. 1-2. Will readvertise. F. W. Clarke, Mercier, National Bank Bldg, archt. CD 2/[illegible] ENR 3/2.

†**Ariz., Tucson**—Pub. Housing Auth., NHA, 785 Market St., San Francisco, Calif., 100 stop-gap family dwelling units, Ariz. 2[illegible] and 50 stop-gap family dwelling units, Ariz. 2353.

†**Ariz., Winslow**—Pub. Housing Auth., NHA, 785 Market St., San Francisco, Calif., 100 family trailers, Ariz. 2351.

LIC BLDGS. (Proposed Work, Cont'd.)

Calif., Alameda — U. S. Eng., 75 New Montgomery St., San Francisco, Zone 19, eda Intransit Depot, incl. storage and ing facilities, administration bldg., cafe- barracks, quarters, etc. $4,000,000.

alif., Berkeley—Home Owners' Loan 1440 Bway., Oakland, Zone 12, plans . D. Reynolds, 564 Market St., San cisco, converting bldg. at 2308-10 nt Ave., providing living units for in- nt war workers, Case No. W4B-1005.

alif., Fresno—Pub. Housing Auth., 785 Market St., San Francisco, 100 y dwelling units, Calif. 4835.

alif., Oakland—Home Owners' Loan 1440 Bway., Zone 12, plans by H. A. sen, Jr., 315 Montgomery St., San cisco, converting lodge bldg., provid- living units for in-migrant war work- Case No. W4B-1408. $10,000.

alif., Oakland—Home Owners' Loan 1440 Bway., Zone 12, plans by M. J. uis, 675-677 St., converting residence at thorne St., off Elm St., providing 4 units for in-migrant war workers, No. W4B-1362, $8,000.

alif., Oakland—Yards & Docks, Navy 18 St. and Constitution Ave. N.W., 25, D. C., architectural and engineer- ervices by L. H. Nicshkian & Frederic arris, Inc., 155 Sansome St., San Fran- repair facilities, Hurley Marine a, NOY (F), 20037.

alif., San Francisco—Housing Auth. of and County of San Francisco, 525 et St., plans by Jas. D. Wickenden and Williams, 402 Jackson St., 200 trailer Calif. 4823; 75 trailer units, Calif. 50 trailer units, Calif. 4826, for NHA.

alif., San Francisco—Yards & Docks, Dpt., 18 St. and Constitution Ave. Wash., 25, D. C., architectural and eering services by L. H. Nishkian & ric R. Harris, Inc., 155 Sansome St., r facilities, Bethlehem Steel Co., NOY 20036.

alif., San Jose—Home Owners' Loan 821 Market St., San Francisco, plans E. Jaekle and W. S. Gibson, Associate, t Bldg., San Francisco, converting loft at 12 Almaden Ave., providing 4 units for in-migrant war workers, No. W4E-21, $8,000.

alif., San Jose—Home Owners' Loan 821 Market St., San Francisco, plans E. Jaekle and W. S. Gibson, Associate, t Bldg., San Francisco, converting nce in 500 block of Santa Clara Ave. ding 4 living units for in-migrant war ers. Case No. W4E-24, $8,000.

alif., San Mateo—Home Owners' Loan 821 Market St., San Francisco, plans E. Jaekle and W. S. Gibson, Associate, t Bldg., San Francisco, converting nce at 601 Hamilton St., providing 9 units for in-migrant war workers. No. W4G-131. $18,000.

alif., Seneca—Pub. Housing Auth., 785 Market St., San Francisco, 200 y dwelling units, Calif. 11214; 200 y dwelling units, stop-gap, Calif. ; 200 family dwelling units, Calif.

., Evansville—Bd. Comrs. Vanderburgh . E. Bauman, aud., Court House, plans . E. Legeman, 226 Main St., children's $150,000. CD 2/21—ENR 2/2.

d., South Bend—Pub. Housing Auth., 201 N. Wells St., Chicago, Ill., de- ting 100 unit dwellings, Ind. 12188, at ford Heights (La Porte Co.), and mov- nd erecting same here.

., Des Moines—State Health Comn., W. ler-ng, comr., state laboratory bldg. 000.

d., Baltimore—Revere Copper & Brass, c., 230 Park Ave., New York, 17, N. Y., plant facilities. Approx. $900,000. se Plant Corp. will finance.

s., Centerville—Pub. Housing Auth., Georgia Savings Bank Bldg., Peach- and Board Sts., Atlanta, Ga., 75 unit y stop-gap housing, Miss. 22180.

nt., Roundup—Pub. Housing Auth., Skinner Bldg., 5 Ave. and Union St., le, 1, Wash., 50 unit family stop-gap g, Mont. 24033.

., Klamath Falls—Pub. Housing NHA, Skinner Bldg., 5 Ave. and St., Seattle, 1, Wash., 40 unit family ings, Ore. 35295.

., Lebanon—Good Samaritan Hospital, t St., Phila., revised plans complete, takes bids hospital bldg. addn., Pa. Est. $312,000. FWA. L. Jallade, Ave., New York, N. Y., archt. CD 2/21 R 2/24.

a., Quakertown—Mycalex Corp. of merica, 30 Rockefeller Plaza, 20, N. Y., facilities. Approx. $600,000. Defense Corp. will finance.

., Amarillo—Pub. Housing Auth., 1205 Electric Bldg., Seventh and r Sts., Fort Worth, stop-gap housing Tex. 41-644. $150,000.

., Colorado City—Pub. Housing Auth., 1205 Electric Bldg., Seventh and r Sts., Fort Worth, 50 family dwelling stop-gap, Tex. 41646.

†Tex., Denison—U. S. Eng., 231 W. Main St., Denison, Prisoner of War Camp, facilities.

†Tex., Freeport—Pub. Housing Auth., NHA, 1205 Electric Bldg., Seventh and Taylor Sts., Fort Worth, plans by Wyatt C. Hedrick, 1st Natl. Bank Bldg., Forth Worth, 100 family trailers, Tex. 41643. CD 3/7—ENR 3/9.

†Tex., Hondo—Pub. Housing Auth., NHA, 1205 Electric Bldg., Seventh and Taylor Sts., Fort Worth, 50 family dwelling units, Tex. 41645.

†Utah, Drager—Pub. Housing Auth., NHA, Dierks Bldg., 1006 Grand Ave., Kansas City, Mo., 100 single unit housing, Utah 42184.

†Utah, Ogden—Pub. Housing Auth., NHA, Dierks Bldg., 1006 Grand Ave., Kansas City, Mo., 15 unit family stop-gap housing, Utah 42185.

†Utah, Salt Lake City—Comr., Salt Lake Co., City & County Bldg., enlarging nurses home, Salt Lake County General Hospital, $65,000. FWA.

†Utah, Salt Lake City—St. Marks Hospital, 2nd West and 7th North Sts., plans by Ware & McClenahan, Utah Savings & Trust Bldg., nurses home. $70,000. FWA.

★†Va., Martinsville—Dpt. P. Wks., City Hall, plans by A. M. Lublin, Dickson Bldg., Norfolk, hospital bldg. $750,000. Applied to FWA. CD 3/8.

†Wash., Bremerton—Bremerton Housing Auth., Bremerton, Mar. 1, road stabilization work at housing for NHA from Argentieri & Colarossi, 1819 Weller St., Seattle, Zone 44, $159,700. E. A. Duffy, 4 and Cherry Bldg., Seattle, 4, engr.

★B. C., Vancouver—City, civic auditorium, 3,000 persons seating capacity. $600,000.

★Sask., Saskatoon—Dpt. P. Health, Regina, mental hospital. $4,000,000.

BIDS ASKED

Bids Asked After March 20

†N. J., Perth Amboy—Perth Amboy Housing Auth., Perth Amboy, yard drainage, rear walks, ventilation of crawl spaces, NJ 6-1, for NHA. Extended date. CD 1/28—ENR 2/3.

Bids Asked March 21

†N. J., Long Branch—Long Branch Housing Auth., 138 Garfield Court, management and clinic bldg., NJ 8-1, for NHA. Extended date. CD 2/25—ENR 3/2.

Bids Asked After March 21

†N. J., Elizabeth—City of Elizabeth Housing Auth., 688 Maple Ave., Zone 2, ventilation of crawl spaces, NJ 3-2, for NHA. Extended date. L. Pohlman, 1140 E. Jersey St., archt. CD 2/17—ENR 2/24.

Bids Asked March 22

†Va., Crewe—Federal Works Agency, 601 State Planters Bank Bldg., Richmond, Zone 19, 1 story, part bamnt., public health center, Va. 44-341. $17,200. Plans deposit $5. A. M. Lublin, Dickson Bldg., Norfolk, archt. CD 12/15—ENR 12/23.

Bids Asked March 27

★†N. Y., Utica — Utica Housing Auth., Municipal Bldg., 150 unit housing, NYS 30171, for NHA, $800,000. S. A. Pennock, 7 Hopper St., archt. CD 1/12—ENR 1/20.

Bids Asked March 29

†Calif., Pittsburg—Housing Auth. of Contra Costa Co., 700 D St., Martinez, frame community bldg., for Los Medanos Pueblo Housing, Calif. 11-2, for NHA. Plans deposit $50. E. Goeffrey Bangs, K. O. Narbett & E. T. Spencer, 605 Market St., San Francisco, archts. CD 2/15—ENR 2/17.

Ont., Toronto—Secy. Dpt. P. Wks., Ottawa, temporary pavilion at Christie St. Military Hospital, for Dpt. P. Wks., Ottawa. About $175,000.

Bids Asked March 30

†Calif., San Diego—Pub. Bldgs. Admin., 18 and F Sts. N.W., Wash., 25, D. C., 3 classroom school, Torrey Pines Housing Development, Calif. 4-902-8A. FWA. Kistner & Curtis, 401 Spreckels Bldg., archts. CD 2/28—ENR 3/2.

Bids Asked March 31

†Calif., Alameda—Pub. Bldgs. Admin., 18 and F Sts. N.W., Wash., 25, D. C., No. 1, 8 classroom school, Calif. 4-543-1, and 14 classroom school, Calif. 4-543-2, both demountable. FWA. CD 2/28—ENR 3/2.

†Calif., San Pedro—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., work at Naval Magazine and Net Depot, NOY 8958.

†Mich., Detroit—Pub. Housing Auth., NHA, 2073 E. 9 St., Cleveland, O., 220 temporary family dwelling units, Mich. 20188. Plans deposit $50. Shreve, Anderson & Walker, 914 Marquette Bldg., Detroit, archts.

Bids Asked About April 3

†Calif., Vallejo—Pub. Bldgs. Admin., 18 and F Sts. N.W., Wash., 25, D. C., cafeteria bldg., for Vallejo Junior High School, Calif. F-905-1A. FWA. H. J. Devine, Cronan Bldg., Sacramento, archt. CD 3/13.

Bids Asked April 3

†Mich., Detroit—Pub. Housing Auth., NHA, 2073 E. 9 St., Cleveland, O., 220 temporary family dwelling units, Mich. 20226. Plans deposit $50. Smith, Hinchman & Grylls, Marquette Bldg., archts. CD 11/23—ENR 12/2.

Bids Asked About April 7

†Mo., Waynesville—Pub. Bldgs. Admin., 18 and F Sts. N.W., Wash., 25, D. C., remodeling school bldg. into hospital, Mo. 23-274. FWA. D. B. Sandford, R. B. Bloomgarten, D. K. Frohwerk, 512 Fidelity Bldg., 911 Walnut St., Kansas City, 6, Mo., archts. CD 3/13.

Bids Asked April 12

†Calif., San Pedro—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., work at Naval Magazine and Net Depot, NOY 8960.

Bids Asked April 14

★†Nev., Las Vegas—Pub. Bldgs. Admin., 18 and F Sts. N.W., Wash., 25, D. C., 1 story, Clark County Hospital, Nev. 26-905. FWA. CD 2/28—ENR 3/28.

Bids Asked Early In June

★†Wyo., Sheridan—Veterans Admin., Vermont Ave between H and I Sts. N.W., Wash., 25, D. C., addnl. hospital bldgs., Fort McKenzie, near here. $1,500,000. CD 2/16—ENR 2/24.

Bids Asked

†Calif., Oakland — Home Owners' Loan Corp., 1440 Bway., Zone 12, converting residence at 4021 Piedmont Ave., providing living units for in-migrant war workers, Case No. W4B-1408. $5,000. CD 2/1—ENR 2/3.

LOW BIDDERS

†Ark., Pine Bluff—Pub. Housing Auth., NHA, 1205 Electric Bldg., Seventh and Taylor Sts., Fort Worth, Tex., Mar. 3, 150 family dwelling units, from J. W. Bateson, 1103 Allen Bldg., Dallas, Tex., $179,780. CD 2/23.

†Calif., Marysville—Pub. Bldgs. Admin., 18 and F Sts. N.W., Wash., 25, D. C., Mar. 10, 1 story, wood Marysville Community Hospital, adjacent to present Yuba Co. Hospital, Calif. 4-480, from A. R. Liner, Box 43, Merced, $326,094. FWA. CD 2/10—ENR 2/17.

★†Calif., San Francisco—Housing Auth. of City and County of San Francisco, 525 Market St., Mar. 9, 528 family dwelling units on Army and Vermont Sts. to Wisconsin St., Calif. 4808, from MacDonald & Kahn, Inc., 200 Financial Center Bldg., $1,020,000. CD 3/3.

†Calif., Sawtelle—U. S. Eng., 751 S. Figueroa St., Los Angeles, Zone 14, new construction, alterations to existing bldg., West Los Angeles Station, No. 391, from Baruch Corp., 625 S. Olive St., Los Angeles, $427,031.

★†D. C., Wash.—Pub. Bldgs. Admin., 18 and F Sts. N.W., Zone 25, Mar. 9, barracks for SPARS, U. S. Coast Guard, from Jeffress-Dyer, Inc., 1741 K St. N.W., $736,191. FWA. CD 2/24—ENR 3/2.

†N. M., Clovis—Pub. Housing Auth., NHA, 1205 Electric Bldg., 7 and Taylor Sts., Fort Worth, Tex., Mar. 9, 62 unit dormitory housing, N.M. 29176, and 100 unit family housing, N.M. 29175, from Ramey & Mathias, 229 Paramount Bldg., Amarillo, Tex., $212,989. CD 2/25—ENR 3/2.

†Va., Arlington—Pub. Housing Auth., NHA, Temporary Bldg. 2, 19 and D Sts. N.W., Wash., 25, D. C., Mar. 6, 130 unit family dwellings, Va. 44301, from D. Piracci & Co., 2552 Woodbrook Ave., Baltimore, Md., (1) $379,300, (2) $386,300. CD 2/7—ENR 2/10.

CONTRACTS AWARDED

Ala., Tuscaloosa—State Institute for Insane, Bryce Hospital, Tuscaloosa, children's addn. to mental hospital, own forces. $150,000. J. Gallalee, Tuscaloosa, engr.

†Calif., Long Beach—Pub. Housing Auth., NHA, 816 W. 5 St., Los Angeles, site imprvs., for 550 trailers, Calif. 4834 and 4837, to R. E. Hazard & Sons, 2845 Ketner Blvd., San Diego, and W. E. Hall Co., 1026 Westminster Ave., Alhambra, $182,000; and for 450 trailers, Calif. 4811, to Lewis W. Hunt Co., 417 S. Hill St., Los Angeles, $150,000.

†Calif., Port Chicago—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., addnl. barracks, and bachelor officers' quarters, NOY 8520, to MacDonald & Kahn, Inc., 200 Financial Center Bldg., San Francisco, $149,549.

Calif., Richmond—Richmond Union High School Dist., 1108 Bissell Ave., reconstructing Roosevelt Junior High School, part 2 and part 3 story, rein.-con. 9 St. and Bissell Ave., to J. B. Allen, 1012 Elm St., San Carlos, $157,231. Bids 2/25. CD 2/8.—ENR 2/10.

†Calif., San Francisco—Housing Auth. of City and County of San Francisco, J. W. Beard, exec.-dir., 525 Market St., 256 family dwelling units, Third and Carroll Sts., Calif. 4817, for NHA, to M. J. King, 231 Franklin St., $426,421. Blanchard, Maher & Ward, 369 Pine St., archts. Bids 3/2.

★†Calif., San Pedro—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., electrical and optical shop, NDD, NOB, NOY 8309, to Guy F. Atkinson Co., 235 Montgomery St., San Francisco, $628,000. CD 3/2, under LB.

†Conn., Stratford—Chance Vought Aircraft Div., United Aircraft Corp., R. T. Erickson, asst. plant engr., 550 Main St., brick, concrete paint storage bldg., to Harry Maring, Jr., Inc., 536 Lindley St., Bridgeport. Est. $40,000. Federally financed. Bids 3/3. CD 2/28—ENR 3/10.

PUBLIC BLDGS. (Contracts Awarded, Cont'd.)

†**Conn., Stratford**—Chance Vought Div., United Aircraft Corp., R. T. Erickson, asst. plant engr., 550 Main St., brick, steel, concrete aircraft engine test plant, to Mariani Constr. Co., 222 Forbes Ave., New Haven. Est. **$40,000.** Federally financed. Bids 3/7. Albert Kahn Associated Architects & Engineers, Inc., 345 New Center Bldg., Detroit, Mich., engrs. CD 1/4—ENR 1/6.

†**Ga., Augusta**—U. S. Eng., Post Office Bldg., Savannah, warehouse, pools, igloos at Camp Gordon, to C. G. Shockley Constr. Co., 1325 Main St., Columbia, S. C., over **$50,000.** Bids 3/6.

Ga., Griffin—Spaulding Co. Bd. Educ., Griffin, school, to Stillwell Constr. Co., Macon, **$188,321.** Wm. J. J. Chase, 140 Peachtree St. N.W., Atlanta, archt.

★†**Ga., Warner Robins**—Pub. Housing Auth., NHA, Georgia Savings Bank Bldg., Peachtree and Broad Sts., Atlanta, 600 family dwelling units, Ga. 9170 and 9171, to M. B. Kahn Constr. Co., 714 Lady St., Columbia, S. C., **$1,355,400.** CD 3/2—ENR 3/9, under LB.

†**Idaho, Farragut**—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., 25, D. C., fire-fighters' school, NOY 7653, Naval Station, to Peter Kiewit Sons Co., and Sound Constr. & Engineering Co., Northern Life Tower, Seattle, 1, Wash., **$149,750.** Bids 2/28. CD 3/9, under CA.

†**O., Akron**—Pub. Housing Auth., NHA, 2073 E. 9 St., Cleveland, site imprvs. for 115 mobile unit housing, Ohio 33280-C, to W. B. Gibson Co., 200 E. Chestnut St., Warren, **$34,837.** CD 11/9—ENR 11/11.

†**O., Rittman**—Pub. Housing Auth., NHA, 2073 E. 9 St., Cleveland, 100 temporary family dwelling units, Ohio 33290, to W. B. Gibson Co., 200 E. Chestnut Ave., Warren, **$218,000.** Bids 2/26, awarded 3/3. CD 2/18.

★†**Tex., Houston**—Southern Acid & Sulphur Co., 7621 Wallisville Rd., superphosphate fertilizer and chemical plant, to United Engineers & Constructors, Inc., 1401 Arch St., Phila., Pa., **$3,500,000.** Defense Plant Corp. will finance. Dorr Co., Inc., 570 Lexington Ave., New York, N. Y., engrs. and archts. CD 2/18—ENR 2/24.

†**Utah, Ogden**—U. S. Eng., 1209 8 St., Sacramento, 8, Calif., engine repair bldg. at Ogden Air Depot, Spec. 850, to R. E. McKee, 4700 San Fernando Rd. W., Los Angeles, Calif., **$96,430.**

†**Wash., Port Orchard**—Pub. Housing Auth., NHA, Skinner Bldg., Seattle, Zone 1, fire warning sys. in housing, Wash. 45147 and 45217, to Leon Hampton Co., Textile Tower, Seattle, Zone 1, **$30,174.**

COMMERCIAL BUILDINGS

PROPOSED WORK

★**Calif., Long Beach** — Home Investment Co., 410 Times Bldg., plans by H. Gibbs, 441 E. 1 St., 532 frame, stucco and frame, shingle dwellings in North Long Beach, north of San Antonio Dr., between Atlantic Ave. and Long Beach Blvd. $2,500,000. G. B. Adams, 458 S. Spring St., Los Angles, engr.

Conn., Greenwich—Putnam Trust Co., 125 Greenwich Ave., sketches 6 story, brick, steel 60 family apartment bldg., garages, West Elm St. $300,000.

Ind., Logansport—Baptist Temple, R. L. Dean, pastor, plans by T. J. Medland, 331 Wheatland Ave., rebuilding 1 story, bsmnt., brick, stone church, $150,000. CD 12/16—ENR 12/23.

Mich., Saginaw—Sisters of Charity, St. Marys Hospital, Saginaw, plans by Smith, Garden & Erikson, 104 S. Michigan Ave., Chicago, Ill., nurses home, St. Marys Hospital. Approx. $150,000. CD 1/27—ENR 2/3.

Pa., Bryn Mawr—Bryn Mawr Hospital, Lancaster Ave., plans by Zantzinger & Borie, 1531 Locust St., Phila., addnl. hospital facilities.

Pa., Phila. — Osteopathic Hospital, 1500 Walnut St., plans by J. T. Brugger, 2017 Delancy St., hospital and college facilities.

Wash., Seattle—Archie Iverson Co., 5703 Palatine Ave., Seattle, Zone 3, plans by C. A. Laurence, Jr., 1128 23 Ave. N., Zone 2, 36 duplex dwellings in Gilman Park Addn. $270,000.

★**Ont., Kingston**—Secy. Bd. Directors, Kingston General Hospital, bids soon hospital expansion, nurses home addn., new childrens hospital, addnl. laboratory and kitchen space, larger out-patients quarters and improving X-ray and cancer services. $1,000,000.

CONTRACTS AWARDED

Calif., Lakewood Village—Second Mayfair Housing Corp., 9437 Santa Monica Blvd., Beverly Hills, 100 frame, stucco dwellings, Mayfair Dist. Owner builds. Over **$150,000.**

Calif., Long Beach — California National Builders, 128 S. La Brea Ave., Los Angeles, fifty 2 story, frame, stucco dwellings near Long Beach Blvd. and San Antonio Ave., Owner builds. Over **$150,000.** R. S. Loring, archt. and W. G. Chandler, engr., both 7411 Beverly Blvd., Los Angeles.

Calif., Ventura—Ventura Defense Housing Corp., 2492 Thompson Blvd., Ventura, and 4700 Clark Ave., Long Beach, 80 frame, stucco dwellings. Owner builds. Over **$150,000.**

Conn., East Haven—V. F. Larsen, 1240 Whitney Ave., Hamden, 27 frame homes, residential development, Woodin St. and Pine Rock Ave. Owner builds. **$185,000.** E. Bradley, 302 Union Ave., West Haven, archt. CD 2/10.

O., Cleveland — Lath Rite Co., c/o A. Seymour, 637-A Union Commerce Bldg., twenty-four 2 story, bsmnt., 22x24 ft., frame 1 family dwellings, to A. Azzolino, 11614 Lenacrave Ave. Est. **$151,000.**

O., Cleveland—Merrian Homes, c/o H. W. Steinhoff, 3541 Fulton Rd., fourteen 2 story, bsmnt., 27x34 ft., brick dwellings, to Chas. Schulz, 4111 Walter Ave. Est. **$154,000.**

INDUSTRIAL BUILDINGS

PROPOSED WORK

Ark., Arkadelphia—PLANT—Temple Cotton Oil Co., A. Gannaway, mgr., Arkadelphia, rebuilding brick bldg. destroyed by fire. $150,000.

Ark., Little Rock—PLANT—Leird Lumber Co., 16 St. and Railroad, plant, $40,000, incl. equip.

Conn., South Coventry—FACTORY—Sterlite Fiber Products, Inc., near Railroad Station, factory, **$40,000.**

★**Ga., Atlanta**—POWER PLANT—Georgia Power Co., P. R. Arkwright, pres., 75 Marietta St., N.W., plans by Robert & Co., Bona Allen Bldg., addn. to Atkinson Plant on Chattahoochee River, near here, $4,000,000.

Ia., Creston—PLANT—Tyler Brothers, Villisca, plans by Dougher, Rich & Woodburn, Old Colony Bldg., Des Moines, coca-cola bottling plant. $125,000.

Ia., Shenandoah—PLANT—Tyler Brothers, Villisca, plans by Dougher, Rich & Woodburn, Old Colony Bldg., Des Moines, coca-cola bottling plant. $100,000.

Mass., Everett—FACTORY—General Steel Products Co., 48 Auburn St., Chelsea, plans being completed by S. S. Eisenberg, 69 Summer St., Boston, 1 story, 65x150 ft., brick factory, Second St. $40,000.

Minn., Fosston — PLANT—Land O'Lakes Creameries, Inc., 2201 Kennedy St. N.E., Minneapolis, plans by M. O. Buetow, 1931 University Ave., St. Paul, 1, 2 and 3 story, 94x117 ft., brick, tile, concrete spray drier plant. $60,000-$75,000. (**Correction**—owner.) CD 11/23—ENR 12/9.

N. Y., Celoron—PLANT—Chautauqua Plywood Co., Celoron, fireproof plant addn. Over $40,000, with equip.

R. I., Newport—GARAGE and STORAGE UNIT—Peter Faerber & Sons Co., 43 Bath Rd., brick garage and storage unit, Bath Rd. and Middleton Ave. $45,000.

Tex., Marshall—SHOP—Texas & Pacific Ry. Co., R. J. Gammie, ch. engr., Texas & Pacific Bldg., Dallas, Zone 2, soon lets contract brick, steel shop bldg.

Wis., Appleton—FACTORY—Miller Electric Mfg. Co., 905 N. Meade St., 1 story, 60x200 ft., concrete block, structural steel factory bldg. R. M. Connelly, P. O. Box 84, engr.

Wis., Kaukauna—MILL—Sangamon Paper Mills, Kaukauna, rebuilding 2 story, bsmnt., 60x260 ft. paper mill, destroyed by fire.

Wis., Kaukauna—IMPLEMENT—Van Zeeland Implement Co., Kaukauna, 1 story, 60x100 ft., concrete block, wood trusses implement bldg. R. M. Connelly, P. O. Box 84, Appleton, engr.

Wis., Shawano — GARAGE — Consolidated Badger Co-op., Shawano, plans by J. F. Dreger, 188 Waugoo St., Oshkosh, 1 story, 100x500 ft., rein.-con., brick garage.

Wis., Woodward—FACTORY—Lindi-Schuette & Lefebvre, archts., 830-64 St., Kenosha, soon lets contract, 2 story, bsmnt., 80x160 ft., brick factory, concrete fdn., for U. S. Standard Products Co., 6804 3 Ave., Kenosha. CD 3/8.

Wis., Woodworth—FACTORY—U. S. Standard Products, Woodworth, plans by Lindi-Schutte & Lefebvre, 709 N. 11 St., Milwaukee, and Kenosha, 2 story, bsmnt., 80x160 ft., brick, lightweight blocks, structural steel factory addn.

BIDS ASKED

Bids Asked March 24

N. C., Marshall — POWER PLANT — French Broad Elect. Membership Corp., Marshall, reconstructing power plant bldg. with machinery installed, REA NC 46-G. Plans deposit $15. J. E. McCrary Eng. Corp., 22 Marietta St. Bldg., Atlanta, Ga., engrs. CD 1/25—ENR 2/3.

Bids Asked

Conn., Stamford—STORAGE—J. Ferro, 26 Chapel St., 1 story, 100x150 ft., brick, steel, concrete storage bldg., in[illegible] office and [illegible] age, Canal St. D. Mans[illegible] 24 Park [illegible] archt.

CONTRACTS AWARDED

Calif., Los Angeles — PLANT — Stan[illegible] Chemical, 555 S. Flower St., sulphuric [illegible] mfg. plant, incl. office, blower and [illegible] house bldgs., at Dominquez Station, to Le[illegible] ard Constr. Co., 37 S. Wabash Ave., Chica[illegible] Ill. Est. over **$40,000.**

Conn., East Hartford—PLANT—Hamil[illegible] Standard Propeller Div., United Aircra[illegible] Corp., 366 Main St., brick, steel, glass pla[illegible] exten., No. 1519-D, to Wadhams, May Carey Co., 15 Lewis St., Hartford. Est. [illegible] **$40,000.** Albert Kahn Associated Architec[illegible] & Engineers, Inc., 345 New Center Bld[illegible] Detroit, Mich., engrs. and archts. CD 1/[illegible] ENR 2/3.

Ind., Anderson—FACTORY—Pierce Gov[illegible] nor Co., N. M. McCullough, pres., 1421 [illegible] Ohio St., 1 story, brick, concrete block [illegible] tory, to H. Kelly, 1607 Pearl St. Est. **$40,[illegible]** Awarded 3/6.

La., New Orleans—PLANT—Higgins Ai[illegible] craft, Inc., Higgins, piling and rein.-c[illegible] fdns. for various industrial bldgs., to R. [illegible] Farnsworth Co., 1515 S. Salcedo St., Agen[illegible] **$47,000.** CD 2/29—ENR 3/2.

Mass., Gloucester — STORAGE AN[illegible] FREEZING PLANTS—Cape Ann Fisher[illegible] Inc., Fort Square, Gloucester, brick stora[illegible] and freezing plants to Faulk Brothers, [illegible] Gloucester Ave. Est. $50,000. CD 12-[illegible] ENR 2/17.

Mass., Lowell—PLANT—General Electr[illegible] Co. and U. S. Rubber Co., c/o Lowell Ord[illegible] nance Plant, Lowell, altering, brick, ra[illegible] plant, incl. installing equip., facilities, [illegible] Morton C. Tuttle Co., 862 Park Square Bldg[illegible] Boston. Est. over $40,000. Lockwo[illegible] Greene Engineers, Inc., c/o Ordnance Plan[illegible] Lowell, engr.

Miss., Natchez—PLANT—Armstrong Ti[illegible] & Rubber Co., Natchez, 200x300 ft., mo[illegible] lithic concrete tire plant addn., to Harr[illegible] Constr. Co., 1138 N.W. 4 St., Oklahoma Ci[illegible] Okla., **$350,000.** CD 2/8—ENR 2/10.

N. H., Keene—GARAGE—Robertson Mot[illegible] Co., 124 Main St., 1 story, 85x120 ft., [illegible] repair and service garage, to Irah H. Ba[illegible] lou, 22 Barker St. Est. $40,000. CD 12-[illegible] ENR 1/6.

N. Y., Falconer—PLANT—National Wo[illegible] sted Mills, P. O. box 666, Jamestown, [illegible] story, textile plant addn., to Warren Const[illegible] Co., 335 Steele St., Jamestown. Est. $6[illegible] 000. Beck & Tinkham, Bailey Bldg[illegible] Jamestown, archts.

N. C., Charlotte—REPAIR SHOP—South[illegible] ern Ry. Sys. B. Herman, ch. engr., M[illegible] Pherson Sq., Wash., D. C., motor car repa[illegible] shop, to Southeastern Constr. Co., 218 W[illegible] 2 St., approx. **$50,000.** Bids 2/10.

★**Okla., Miami**—PLANT—B. F. Goodrich Co., 500 S. Main St., Akron, O. Th[illegible] plant, to George A. Fuller Co., 1133 Munse[illegible] Bldg., Wash., D. C. Est. **$6,000,000.** Aust[illegible] Co., 16112 Euclid St., Cleveland, O., engr[illegible] and archt. (**Correction**—name of contrac[illegible] tor.) CD 1/27—ENR 2/3, under Contract[illegible] Awarded.

★**Tex., Freeport** — PLANT — The Dow Chemical Co., M & M Bldg., Houston, and Freeport, triple expansion extra[illegible] chemical plant, separate contracts. $1,500,[illegible] 000. CD 1/10—ENR 1/20.

Tex., Houston—MILL, etc.—Jas. G. Whi[illegible] Engineering Corp., 9700 Q St., structura[illegible] steel type mill bldg., boiler house. Owner[illegible] builds. **$40,000.** CD 3/8.

Tex., Plains—PLANT—Shell Oil Co., Inc[illegible] & Associates, Mayo Bldg., Tulsa, Okla.[illegible] plant in Wasson area, northwest of [illegible] —Jno H. Gibson. Purchase and Hire. $200,[illegible] 000. CD 2/17—ENR 2/24.

Tex., Sealy—CRUDE OIL PUMPING UNI[illegible] —Magnolia Petroleum Co., Esperson Bldg[illegible] Houston, crude oil pump. unit at statio[illegible] near here, force account. **$45,000.** CD 1/[illegible]

Tex., Texas City—PLANT—Southport Pe[illegible] troleum Co., Delaware, Md., and Texas City[illegible] 37x150 ft. plant. with 25x34 ft. wings. H[illegible] refinery plant zone, to Tellepsen Constr. Co.[illegible] 3900 Clay St., Houston, approx. **$65,000.** Mi[illegible] Continent Eng. Co., Baytown, engrs.

Tex., Tyler—PLANT—Texas Soap Co.[illegible] Tyler, soap mfg. plant, facilities. Owner[illegible] builds. **$40,000.** CD 3/1—ENR 3/9.

Wis., Portage — MILK DEHYDRATIO[illegible] PLANT — Portage Cooperative Cream[illegible] Assn., Portage, 2 story, 80x100 ft., mi[illegible] dehydrating plant, to Johnson & Kram[illegible] St. Charles, Minn., **$53,557.** Bids 3/[illegible] CD 2/29—ENR 3/2.

B. C., Ocean Falls—PLANT—Pacific Mil[illegible] Ltd., foot of Campbell Ave., Vancouver, [illegible] story, 43x43 ft., rein.-con., chemic-[illegible] bldg., to J. L. Galloway, 1011 Richelieu [illegible] Vancouver, **$75,000.** Awarded 3/6.

Proposal Advertisements see p. [illegible]